





Project co-financed from the European Regional Development Fund within the Operational Programme Development of Eastern Poland 2007-2013



size and structure - development centres - success story - sector potential -

Renewable energy sources Sector in Eastern Poland

1. Potential of Eastern Poland

Eastern Poland is a macroregion that covers 31.7% (99,037 km²) of Poland's area and is home to 21.4% (8,238,200 people) of the country's population. It consists of five voivodeships: Lubelskie, Podkarpackie, Podlaskie, Świętokrzyskie and Warmińsko-Mazurskie. Due to its location along Poland's eastern border, this macroregion is particularly unique and attractive to investors. Actually, it is the most eastern part of the European Union which borders directly with Russia, Belarus and Ukraine. Thanks to the excellent geographical location in the trans-border zone and the long-standing close economic relations between the enterprises and local governments from Eastern Poland and the enterprises and local governments from Russia, Ukraine and Belarus, this macroregion may become the platform for cooperation between companies from the European Union and the former Soviet Union countries.

Eastern Poland is a macroregion of young (more than 29% of its population are under 25 years of age) and educated (there are 76 higher education institutions with over 306 thousand students) people. Considering the fact that wages in Eastern Poland are 15% lower compared with other parts of Poland, it is this region that creates excellent climate for investors to set up businesses and make investments. Eastern Poland's investment potential is additionally strengthened by the business infrastructure. There are five Special Economic Zones in this macroregion, which offer income tax exemptions for potential investors. Science and technology parks help promote cooperation between business and scientific circles. Equally important is a system of investment incentives. Investors can count not only on additional funds from government subsidies (so-called multiannual programmes) but also on support available though national and regional operational programmes, and local tax reliefs. Potential investors can also obtain funds under the Operational Programme 'Development of Eastern Poland', which is specifically aimed at the 5 voivodeships of Eastern Poland.

MAP 1 Eastern Poland Voivodeships



Source: Own compilation on the basis of the administrative division of Poland

Due to the region's location, resources, natural conditions and tradition, the particularly strongly in Eastern Poland: BPO, construction, chemical, wood and furniture, renewable energy sources, logistic, aviation, engineering, metallurgical, clothing, food, and business tourism industries.

TABLE 1 The structure of local government in Eastern Poland

Voivodeship:	Lubelskie Voivodeship	Podkarpackie Voivodeship	Podlaskie Voivodeship	Świętokrzyskie Voivodeship	Warmińsko-Mazurskie Voivodeship
poviats	24	25	17	14	21
rural gmina	171	114	82	71	67
urban gmina	42	45	36	31	49
towns with poviat rights	4	4	3	1	2
biggest towns	Lublin,	Rzeszów,	Białystok, Łomża,	Kielce,	Olsztyn,
(by population)	Zamość	Przemysi, Stalowa Wola	Suwałki	Starachowice	Elbląg, Ełk

Source: Own compilation on the basis of the administrative division of Poland

2. Renewable energy sources sector in Poland



Poland is one of the key countries in Europe for renewable energy development. A dynamically developing economy and the increasing awareness of 38 million strong Polish population determine a growing demand for clean technologies and energy. At the same time the Polish economy strives to reduce its dependence on oil and gas import and to reduce the share of coal in domestic energy production. The European Union membership posed new challenges in respect of the share of renewable energy sources in the energy production structure: pursuant to the adopted commitments, share of renewable energy sources in domestic energy production should amount to 15% in 2020 (currently 10%). In addition, Poland adopted the programme for biogas manufacturing plant construction in each commune. Considering the location and natural conditions, such as favourable wind conditions in the northern part of Poland or insolation as well as agriculture development, Poland has a great potential to produce renewable energy (Poland may provide more than 12% of European biomass energy potential). The attractiveness of the renewable energy sector in Poland has been additionally strengthened by a special system of investment incentives supporting new initiatives in the sector accompanied by the adopted regulations

TABLE 2: Export of bioethanol and biodiesel in 2006-2011

	200)6	200)7	20	08	20	09	201	10	20	11
	tons	TJ	tons	TJ	tons	TJ	tons	TJ	tons	TJ	tons	TJ
bioethanol	33 302	989	1 509	45	400	11	-	-	1 450	43	-	-
biodiesel	51 528	1 979	19 440	746	-	-	8 343	320	13 060	502	37 441	1 438

Source: Central Statistical Office, 2005-2011

regarding the enterprises involved in renewable energy such as e.g. priority in access to the industrial power grid and reduced charges for connecting to the power grid offered to renewable energy producers or attractive prices which may also be subject to trade in certificates of origin (the so-called Green Certificates). The domestic renewable energy market is absorptive enough for Poland not to be a renewable energy exporter. The only exception is made for bioethanol and biodiesel, however their export is of minor importance [table 2].

On account of natural conditions and specific location, agricultural traditions, agriculture development and its share in the economy of the Eastern Poland Voivodeships and consequently the conditions for the development of renewable energy production, this sector is of a great import to the development of the entire Macroregion economy.

2.1. Renewable energy types and its resources in Poland

2.1.1. Hydro energy

Water energy resources depend on two factors: riverbed fall and water flow. Poland is a lowland country of relatively low precipitation and high soil permeability, which significantly reduces the resources of this energy source. The real economic potential of water energy is estimated at 18 PJ (% TWh/annum), of which only 41% is currently used. Power production in 2011 amounted to 2 331.4 GWh. At the end of 2011, a total of 746 water power plants operated in Poland, whose joint capacity amounted to 951.390 MW.

Water energy is environmentally clean, however available only in the areas of adequately high precipitation and favourable natural topography. The majority of domestic resources (approx. 68%) are situated in the area of the Vistula River basin, in particular in its right-bank tributaries. The Carpathian Mountains, the Sudetes in the Roztocze Region as well as the rivers of Przymorze offer favourable conditions for the construction of small water power plants. The potential of the Odra River is also significant [table 3].

2.1.2. Geothermal energy

Geothermal energy is acquired from the inside of the Earth. Geothermal water is situated under the surface of almost 80% of the territory of Poland, in the amount of approx. 6 600 km³, while its temperature ranges between 25-150 C°. These resources are relatively equally distributed in an extensive area of Poland, which enables their use for energy engineering purposes.

It should be emphasized that Polish geothermal water is of relatively low temperature. Water resources are situated chiefly in the Podkarpacie Region, a belt between Szczecin and Łódź as well as in Grudziądz and Warsaw region. The real potential is equal to 12.4 PJ (use efficiency – 12%) [table 4].

TABLE 3. Water energy resources in Poland

		Technical resources in GWh/a
main rivers	Vistula river basin	9 270
	Odra river basin	2 400
small power industry		1 700
Pomeranian rivers		280
total		13 930

Source: Polish Energy Chamber of Renewable Energy

So far, Poland has constructed only five heating systems based on geothermal water – PEC Geotermia Podhalańska, Geotermia Pyrzyce, Geotermia Mazowiecka, Geotermia Starogard Szczeciński and Geotermia Uniejów. On account of too low temperatures, geothermal energy is used in Poland only for heating systems manufacturing.

2.1.3. Solar energy

Solar energy resources in Poland are above all highly diversified in respect of their distribution in time in a working cycle. 80% of total annual insolation is recorded in the spring and summer seasons since April until the end of September.

The region featuring the greatest solar radiation in Poland is the southern part of the country, i.e. approx. 50% of the territory of Poland, which receives solar radiation of 1 022-1 048 kWh/m²/annum, whereas the southern, eastern and northern part of Poland - 1 000 kWh/m²/annum and less. The lowest energy inflow is observed in the Silesian region and in the area situated on the border between Poland, the Czech Republic and Germany, until recently called "the Black Triangle" due to high air pollution. The northern region of the country, covering the coastal belt with the exclusion of the Western Coast, has poor insolation. Annually the northern edge of Poland receives approx. 9% of solar energy less comparing to the southern one. Annual density of solar radiation in Poland on horizontal surface oscillates between 950 and 1 250 kWh/m².

TABLE 4: Geothermal resources in Poland

District	Energy volume
grudziądzko-warszawski	9 835
szczecińsko-łódzki	18 812
przedsudecko-północnoświętokrzyski	995
pomorski	162
przybałtycki	241
lubelski	193
podlaski	113
przedkarpacki	1 555
karpacki	714
Total	32 620

Source: www.psew.pl

TABLE 5. Power plants using renewable energy sources and their power in Poland (31.12.2011)

	Number of power plants	Total power in MW
Biogas	171	103.487
Biomass	19	409.680
Solar	6	1.125
Wind	526	1 616.361
Water	746	951.390
TOTAL	1 468	3 082.043

Source: Energy Regulatory Office, 31.12.2011

At present solar energy, whose real economic potential amounts to 83 PJ, is used only in 0.2%, mostly as a heating source for solar collector installations heating air or water. Solar batteries using solar radiation to produce power are, for economic reasons, used only in low power installations, feeding mostly standalone facilities situated far away from the power networks e.g. road signs, street lighting etc.

2.1.4. Wind energy

Real economic potential of wind energy amounts to 445 PJ (of which land wind energy is 337 PJ and sea wind energy is 67 PJ). In 2011 total capacity of the installed equipment in Poland reached 1 351.866 MW, whereas power production amounted to 3 204.4 GWh. The areas offering particularly favourable wind conditions in Poland include the Baltic Sea coast, especially its western part and north-eastern border of Poland. When considering the construction of wind power plant, one may also include other areas, in particular these of greater height above the sea level, with no natural barriers and non-forested areas of hills and slopes of southern Poland. Such areas may be found in the Bieszczady Mountains, Dynowskie Foothills, Lubawski





Source: Energy from renewable sources in 2011, Central Statistical Office

Hummock and the surroundings of Kielce. Previous fragmentary measurements performed in these areas indicate a significant wind energy potential.

Wind energy potential is estimated at 6.0–8.0 TWh of power per annum.

2.1.5. Biomass energy

In Poland, biomass is considered to be a renewable energy source offering the greatest resources and currently competing against fossil fuels. It may be used for energy production purposes in the process of direct combustion of solid and gas biofuels or it may be processed into liquid fuels both for power and heat production. At present, solid biomass resources involve the use of excess straw and hay, wood waste, cultivation of power plants and the use of agricultural waste, including biogas. Therefore, they are concentrated in the areas of intensive agricultural production. In the next decade Poland considers the use of the following products for energy purposes i.e. their processing into heat:

- cereal plant straw;
- branches from orchard clear cutting and other fruit and vegetable cultivation waste;
- wood chips from power plants cultivation, among others of willow, virginia mallow and rambler rose;
- alcohols (raw materials: potato, white beet, cereals) as additives to carburettor petrol engines;
- rape oil (raw materials: rape cultivated on partially contaminated soils) as fuel for high pressure engines;
- biogas from organic fertilizers of animal origin;
- biogas from sludge, liquid and solid municipal waste
- trees and branches from clear cutting and sanitary cutting of forests;
- branches from production cuttings;
- wood industry waste, sawdust, etc.;
- plantation of deciduous energy forests (timber for single-family houses construction), cut tree tops and branches to be combusted in heating furnaces of heating power of approx. 200 kW.

Biomass is a source used mostly in the production of heat in the facilities of low and medium power in distributed generation (individual furnaces and local boiler houses) and to produce power in condensing coalpowered boilers of CHP plants of high power output in the co-combustion process. Real economic potential amounts to 600 PJ, firewood (forests) – 24 PJ, power plant cultivation – 287 PJ. In 2011 a total of 7 148.4 GWh of energy was generated from biomass. In total 171 biogas power plants (total capacity of 103.487 MW) and 19 biomass power plants (total capacity 409.680 MW) have been currently operating in Poland.

3. Renewable energy sources sector in Eastern Poland

Each of the five Eastern Poland Voivodeships has a various potential of individual technologies of generating renewable energy from different sources. The Podlaskie Voivodeship features the greatest potential in this respect, while the Warmińsko-Mazurskie and the Lubelskie Voivodeships have a lower potential and in relation to other Eastern Poland Voivodeships. The Świętokrzyskie and Podkarpackie Voivodeships have the lowest potential in this area.

However, despite relatively the highest attractiveness of the Podlaskie Voivodeship in renewable energy production, the greatest volume of renewable energy is produced in the Podkarpackie Voivodeship i.e. the least attractive for this activity.

3.1. Sector size and structure

Participation of the individual Voivodeships in production of renewable energy in Poland is low. The greatest contribution to the renewable energy production in Poland was recorded in the Podkarpackie Voivodeship (12.3%), whereas the lowest – in the Lubelskie Voivodeship (0.3%). The remaining Voivodeships have only slightly higher share in the renewable energy production in Poland; the Świętokrzyskie Voivodeship (1%), the Podlaskie Voivodeship (2.4%) and the Warmińsko-Mazurskie (3.3%).

However, when considering the share of Eastern Poland Voivodeships in production of certain types of renewable energy, in some cases the share of the Voivodeships of Eastern Poland region is significant in the scale of the entire country. This refers in particular



to the Podkarpackie Voivodeship, whose share Poland-wise in the water energy production amounts to 18% and to the Warmińsko-Mazurskie and Podlaskie

TABLE 6. Renewable energy potential in Eastern Poland

Voivodeship	Attractiveness assessment	Technologies of renewable energy production of the greatest potential
Lubelskie	medium	solar energy, wind energy, biogas
Podkarpackie	low	wind energy, solid biomass
Podlaskie	high	wind energy, solid biomass, biogas
Świętokrzyskie	low	solar energy
Warmińsko-Mazurskie	medium	wind energy, solid biomass

Source: Own compilation on the basis of the Institute for Renewable Energy (IRE).

Voivodeships, whose share in the domestic wind energy production amounts to 4% and 3.5%, respectively.

Production infrastructure in Eastern Poland in the renewable energy sector is composed of 295 power plants – 32 biogas, 7 biomass, 78 wind and 171 water power plants. In total, Eastern Poland produces 669.826 MW of renewable energy, provided that the greatest volume – approximately 381.526 MW is produced from wind energy (57% of renewable energy produced in Eastern Poland) and water energy (229.527 MW, 34%). Production of renewable energy from the remaining sources in Eastern Poland amounts to 58.773 MW.

3.2. The largest foreign enterprises and investors

A considerable percentage of the enterprises operating in the renewable energy sector comprise foreign enterprises. However, a majority of them are focused on wind energy and to a much lesser extent

on biomass energy. Their share in the production of wind power is the largest (both in case of direct investors and foreign investment funds focused on development of renewable energy, such as: Spanish Taiga Mistral, British Continental Wind Partners, Eco-Wind Construction from Luxembourg and CEZ Group operating across Central Europe). Foreign capital companies are most willing to invest in Poland, where the price per certificate of generation of 1MWh of renewable energy is one of the highest in Europe. According to the Information 2/2012 of the President of the Energy Regulatory Office of 8 February 2011, a compensatory payment for the energy generated from renewable sources after its annual valorization in 2012 amounts to PLN 286.74. By way of a summary, it needs to be emphasised that the price for one unit of electrical energy generated from RES, also from wind, is approx. 450-470 zł/MWh.

The largest wind power plant in Poland with a total capacity of 120 MW was launched in Margonin in 2010. The investor was EDP Renevables Polska.

TABLE 7. Share of the energy from renewable sources in the overall primary energy generated in the course of 2006-2011

Voivodeship	2006	2007	2008	2009	2010	2011
Primary energy obtained in total [TJ]	3 253 082	3 040 160	2 985 356	2 817 089	2 824 028	2 609 474
Energy obtained from renewable sources [TJ]	199 565	203 141	226 788	253 352	287 953	325 234
Share of eneregy from renewable sources in total primary energy	6.1%	6.7%	7.6%	9.0%	10.2	11.2%

Source: Energy from renewable sources in 2011, Central Statistical Office

TABLE 8. Power plants in Eastern Poland according to renewable energy source

Туре	Subtype		Lubelskie		Podkarpackie		Podlaskie		Świętokrzyskie		Warmińsko -Mazurskie	
1		1	2	1	2	1	2	1	2	1	2	
Type Biogas Biomass Wind	Biogas from sewage	4	1.310	7	2.467	3	2.071	2	0.980	5	1.912	
	landfill biogas from waste treatment plant	1	0.500	3	1.511	1	0.700	1	0.360	2	1.142	
	from agricultural biogas	2	2.1999					1	0.800	1	1.200	
	forest, agricultural and horticultural waste	-	-	1	0.580	-	-	1	1.900	1	0.220	
Riomass	mixed biomass	-	-	-	-	1	55.000	1	10.800	-	-	
DIOITIASS	Biomass from industrial and wood waste, cellulose and paper waste	1	2.600	-	-	-	-	-	-	1	0.500	
Wind	Land	5	2.150	21	55.395	19	119.100	12	4.406	21	200.475	
	run-of-the-river to 0.3 MW	21	1.135	10	0.726	12	0.809	36	1.740	75	5.744	
	run-of-the-river to 1 MW	1	0.370	2	1.484	-	-	1	0.450	8	4.369	
Water	run-of-the-river to 5 MW	-	-	-	-	-	-	-	-	3	5.800	
	run-of-the-river to 10 MW	-	-	1	8.300	-	-	-	-	-	-	
	pumped-storage	-	-	1	198.600	-	-	-	-	-	-	
Solar radiation:	producing from solar radiation	1	0.021	-	-	-	-	-	-	-	-	
Co-incineration technology:	realizing technology of co-incineration (fossil fuels and biomass)	2	0.000	2	0.000	-	-	1	0.000	-	-	

Source: Energy Regulatory Office, January 2013

TABLE 9. The largest enterprises operating in the renewable energy sector

Enterprise	Scope of activity	Investments	Headquarters
Electrabel Zielona Energia Sp. z o.o.	biomass boilers biomass power plants	power plant in Połaniec	Poland
EPA Sp. z o.o.	wind power industry	Zagórze Wind Farm	Poland
RP Global Poland Sp. z o.o.	designs of water and wind power plants	wind warm in Pomorze	Austria – Spain
RWE Renewables Polska Sp. z o.o.	designs, construction and operation of wind farms	Suwałki Wind Park	Germany – Poland
Sevivon Sp. z o.o.	preparation, designing and supervision over the wind farms construction	for the most Northern Poland	Germany – Poland
Vatenfall	operation of wind turbines	owner of Zagórze wind farm	Sweden
Vortex Polska Sp z o.o.	planning, financing, construction and managing wind parks	current development of 5 wind farms (total power of 180 MW)	Germany

Source: Own compilation on the basis of the companies' data

The following should be listed among the largest foreign investors: Danish Greentech Energy Systems, Polen Invest (Poldanor - biogas power plants) and LM Glasfiber (turbines manufacturer), Spanish companies - Acciona, Fersa, Green Source (biofuels), Prio (Martifer Group - biofuels) and Iberdrola, E. ON and Prokon from Germany, Green Baer from Luxembourg, Grupo Meneses from Portugal, International Wind Power from Austria, Invenergy from the USA, Mitsui (J-Power) from Japan, KD E Energy from Holland and among the Polish enterprises - Avallon and EnergoPartners from Poznań, Baltic Wind, PGE Renewable Energy, Renovatio Power Polska from Warsaw, Tauron Polish Energy from Katowice, Domrel from Szczecin, Energa Invest and Eurowind Services from Gdańsk, 3E/ New Energy Partner Group from Gdynia. Involvement of the recognized foreign enterprises in wind energy production in Poland also generates investments in business-related sectors. The development of wind farms resulted in an inflow of enterprises manufacturing, inter alia, wind turbines.

3.3. Supporting clusters, organizations and associations

There are 59 clusters operating in the area of Eastern Poland (as already established clusters and cluster initiatives). These are related to the leading economic sector in Eastern Poland. The greatest number (21) is located in the Lubelskie Voivodeship.

5 (6) clusters involved in research and production of renewable energy sources operate in the Eastern Poland region

3.3.1. Lublin Eco-energy Cluster

The cluster was established on the initiative of the Foundation for the Development of the Lubelskie Voivodeship. The vision of cluster is to transform the Lubelskie Region into a European leader in the production of renewable energy. The mission of the cluster is to support all activities related to sustainaTABLE 10. Clusters and cluster initiatives in Eastern Poland

	Operating clusters	Cluster initiatives
Lubelskie	6	15
Podkarpackie	4	8
Podlaskie	4	4
Świętokrzyskie	6	5
Warmińsko-Mazurskie	4	3

Source: Onw compilation on the basis of data obtained from www.paiz.gov.pl

ble use of renewable energy sources on the basis of the Lubelskie Voivodeship development by means of drawing up and implementing technological, manufacturing and process innovation and propagation of renewable energy sources in the Macroregion.

The cluster partners include 31 entrepreneurs, of which 18 are micro-enterprises, 3 – small entrepreneurs, 6 – medium and 4 – large enterprises as well

CHART 2. Market shares of leading wind farm manufacturers and suppliers in Poland (in %)



Source: Renewable Energy Institute, 2011

as foundations, 4 territorial self-government units, state unit with legal entity and 5 scientific and research units.

3.3.2. Małopolska and Podkarpacie Clean Energy Cluster

In September, 2006 the agreement on establishing the Małopolska and Podkarpacie Clean Energy Cluster was concluded. The agreement was signed by the representatives of different institutions and organizations, chiefly from Małopolskie and Podkarpackie Voivodeships as well as from Śląskie Voivodeship. The Marshalls of the Podkarpackie and Małopolskie Voivodeships, AGH University of Science and Technology, Jagiellonian University, Krakow University of Technology, Krakow University of Agriculture and Rzeszów University of Technology, State High Vocational School in Krosno, State High Vocational School in Tarnów, Mineral and Energy Economy Research Institute of the Polish Academy of Sciences in Krakow, Institute of Nuclear Physics of the Polish Academy of Science, Gas and Oil Institute in Krakow, Podkarpacie Energy Agency in Rzeszów, Małopolska Energy and Environment Agency Sp. z o.o. in Krakow, Polish Association of Hydrogen and Fuel Cells in Krakow, Voivodeship Environmental Protection and Water Management Fund in Krakow, Rzeszow Power Plant in S.A. in Rzeszów, and Krakow Heat and Power Plant S.A. in Krakow, State Municipal and Housing Management Heat Plant Nowa Deba, Power Factors Institute Sp. z o.o. in Nowa Deba, Stalowa Wola Power Plant S.A. in Stalowa Wola, Polish Oil and Gas Company S.A. in Warsaw - division in Sanok, Southern Power Consortium S.A. in Oświęcim, Power - Engineering Dwory Sp. z o.o. in Oświęcim and Association of Chemical Industry Engineers and Technicians, division in Oświęcim, that is the representatives of the scientific and research institutes, agencies, funds and regional associations involved in energy and the enterprises acquiring and producing energy carriers.



The main objective of the cluster operation is to improve the production of clean energy in the region to protect natural environment and focus on scientific research in this area as well as to increase energy security of the country. The cluster research programme assumes delivery of, inter alia, such tasks as improved production of energy from renewable sources (water, wind, solar, biomass and geothermal energy) and the use of waste to generate energy, local use of natural gas and oil, use of methane, hard coal, carbon dioxide sequestration in the exploited geological structures of hydro-carbon deposits, use of compressed natural gas for municipal transport vehicles, use of hydrogen, zero-emission production of liquid fuels, coal and nuclear power synergy, energy saving in the power, construction, transport industry and households.

3.3.3. Świętokrzyska Biomass

The cluster of biomass manufacturers for the purpose of power industry is located in the Świętokrzyskie Voivodeship. The aim of the cluster is to implement a heating energy production system based on renewable energy sources. The main cluster activities include analyses of economic, financial and technical aspects of biomass use, development of system for logistics of acquiring, production, transport and processing of biomass, implementation of the system based on renewable energy sources use in the Świętokrzyskie Voivodeship and implementing the heat and power production system in the Świętokrzyskie Voivodeship.

Cluster operation is to contribute to the use of wood biomass to produce heat and power in the Świętokrzyskie region, stimulating business activity in particular in the Poviats and Communes of large area of arable lands, fallows, forested areas and wood waste.

3.3.4. Baltic Eco-Energy Cluster

The Baltic Eco-Energy Cluster (BEEC) is a joint initiative of the PAS Institute of Fluid-Flow Machinery, University of Warmia and Mazury, Gdansk University of Technology, Koszalin University of Technology, Marshals and Self-Governments of the Pomorskie and Warmińsko-Mazurskie Voivodeships, as well as the economic units and associations with their seats in those Voivodeships. Geographically, BEEC's activity covers the area of Northern Poland from Koszalin through the Pomorskie Voivodeship to eastern confines of the Warmińsko-Mazurskie Voivodeship. The strategic goal of the BEEC is to coordinate the delivery of the Regional Energy Strategies (RES) in the scope of widely understood eco-energy, mostly by means of improving the effectiveness of absorption of regional and central EU funds in the Macroregion and facilitating contacts within the international cooperation at the EU level. One of the most important BEEC objectives is to implement the concept of widely understood Distributed Cogeneration i.e. simultaneous production of heat and power at small and medium scale on the basis of renewable

energy sources, in particular biomass, as well as water, solar and wind energy. Actions within the BEEC aim at: reducing share of fossil fuels as primary energy sources, accompanied by significant increase of biofuels use and other renewable energy sources use, stimulating development of the new technologies in the area of green technologies and educating the experts and specialists, supporting production of equipment for bio-energy industry and propagation of energy-saving technologies. The BEEC technologies are reflected by, among others, the establishment of Agro-Energy Complexes and small and medium cogeneration power plants.

The cluster is currently composed of the representatives of self-governments of: Kwidzyń, Lidzbark Warmiński, Nowe Miasto Lubawskie, Słupsk, Gniewino, Gołdap, Górowo Iławeckie, Orneta, Kisielice, Kępice, Pomorskie Association of Rural Communes, scientific institutions, such as Fluid-Flow Machinery, University of Warmia and Mazury, Gdansk University of Technology, Koszalin University of Technology, Maritime Institute in Gdańsk, Institute of Energy and Institute of Electrical Engineering and the representatives of industry – group of 56 enterprises.

3.3.5. Warmia and Mazury Cluster "Warmer Together"

The cluster was established by the Municipal Heating Power Company in Olsztyn in 2007. The key objective for its establishment was to stimulate cooperation and industrial integration by means of providing new opportunities in the area of innovation, new technologies, access to knowledge, and better support by self-governmental units which typically own heating power companies.

The "Warmer Together" cluster will aim at the development of the heating power sector by means of improving competitiveness of heating power enterprises, diversification of their activity, contributing to perception of the region as an important centre of production and distribution of heat, which is both environmentally-friendly and increasingly using the renewable energy sources. It includes twelve heating power enterprises from the region, ten self-governmental units (Marshall Office, city offices in Olsztyn, Barczew, Bartoszyce, Działdowo, Iława, Korsze, Morąg, Olsztynek and Ostróda) and two institutions: Warmia and Mazury University and the Warmia and Mazury Regional Development Agency. In 2008 the cluster was joined by three new members – ZEC Dobre Miasto, PEC Termex from Szczytno and PEC Giżycko.

3.3.6. Kętrzyn Renewable Energy Cluster

Kętrzyn Renewable Energy Cluster initiative was established in May 2007 by signing the agreement of the following signatories: representatives of the Warmia and Mazury University (Renewable Energy Research Centre), Marshall Office of the Warmińsko-Mazurskie Voivodeship, Kętrzyn Municipality and the Akwawit – Brasco company.



These entities expressed their willingness to cooperate in establishing Kętrzyn Renewable Energy Cluster. This initiative, currently under development, is to be located at the area of the former sugar refinery in Kętrzyn. The fundamental objective of its operation is to produce the so-called clean energy, including the production of biofuels and bio-components. Municipal waste, manure and cereals will be among the processed raw materials. The role of the Warmia and Mazury University will be to develop new technologies and supervising their implementation and supporting the establishment of research and development facilities.

It is worth emphasising that the Warmia and Mazury University is one of the most active entities in the field of renewable energy sources. This is the place where inter alia Renewable Energy Research Centre operates in Olsztyn, established in November, 2006. The mission of the Centre is to integrate the activities of the scientific environment, self-governments and businesses in developing and implementing the new technologies for renewable energy generation. The objective of the Centre activity is to conduct scientific research on new technologies of renewable energy and the development of functional power installations acting as a research workshop, a source of acquiring and distributing power and a base for educational, promotional and promotional activity. The Centre development strategy assumes the establishment of a knowledge-based region of innovative and environmentally-friendly renewable energy technologies, in which the results of scientific research will be used in practice and converted into commercial success of the business entities involved.

Since 2008 the Centre has been carrying out a research project called: "Model agro-energy complexes as an example of Distributed Cogeneration based on local and renewable energy sources", whose key aim is to develop new technologies for acquiring and processing bioenergy carriers and new technologies for conversion of this energy into usable heat and power. These technologies constitute the basis for creating energy cells based on local resources of renewable energy sources, including mostly biomass and they contribute to the development of agro-energy complexes. These complexes constitute the most effective form of delivery of the so-called distributed cogeneration at a small scale.

3.4. Development prospects

According to the report – Planned investments in renewable energy in 2009–2022 – approx. 80% of the enterprises participating in the research, declared that within the next three years they intent to invest into at least one of the renewable energy sectors.

Future investors pay the greatest attention to wind energy. 89.5% of those surveyed declared their being active in the sector. Globally and in particular in the European Union, the most dynamically developing renewable energy source is the wind energy sector, and the Polish market of wind energy offers the greatest potential in the entire Central and Eastern Europe. The surveyed entities most frequently declared that they are interested in the development of wind farms in the near future (of an average capacity of 360 MW). For the biomass sector the most frequently declared investments are as follows: construction of heating plants or heat and power plants (average capacity of 5 MW). The enterprises interested in investments related to biogas intend to build biogas plants (average capacity of 7 MW) or purchase design/ shares from a developer.

In respect of future investments, one also needs to mention water energy alongside the above-mentioned three types of renewable energy. In Poland, the largest source of renewable energy is large and small water energy industry (hydroelectricity). This sector will be developing chiefly on the basis of the modernization of old power plants of high capacity as well as small water power plants of the capacity up to 5 MW.

The northern part of Poland (the Pomorskie, Zachodniopomorskie, Kujawsko-Pomorskie and Warmińsko-Mazurskie Voivodeships) was the area indicated most frequently for the task of delivering planned investments. These are usually the regions providing the most favourable conditions to produce wind energy.

Taking into consideration the forecasts for the development of using renewable energy sources on the one hand and the economic potential of Eastern Poland Voivodeships on the other hand – in particular with respect to biomass, biogas, wind and water energy, one may expect that one of the most important regions in Poland, in which the renewable energy sources will develop, is Eastern Poland itself.



4. Investment incentives - state aid

In accordance with the map of the regional state aid, investors embarking on new ventures in Eastern Poland may count on the highest possible level of support that can be obtained from the European Union. They can receive, from various sources, support equal to 50% of the new project's eligible costs (in the case of SMEs, the support may be increased up to 70% and 60% respectively).

Poland offers an attractive system of investment incentives designed to back up new investments in the regions. It consists primarily of the following:

- income tax exemption in Special Economic Zones;
- property tax exemption;
- targeted subsidies from the state budget;
- financial grants from the EU structural funds.

All these forms of investment incentives are linked, as a rule, with granting state aid in the form of regional investment aid.

4.1. Regional investment aid

Regional investment aid is allocated to the socalled **initial investment** consisting in an investment in tangible and intangible assets related to:

- establishment of a new enterprise;
- expansion of an existing enterprise;
- diversification of production through introduction of new, additional products;
- substantial change in the production process of an existing enterprise.

Tangible assets – include land, buildings, structures and equipment.

Intangible assets – assets related to transfer of technologies by way of acquisition of patent rights, licenses, know-how or unpatented technical know-ledge. Replacement investment is not considered a new investment.

Regional investment aid is calculated in two ways:

- by reference to capital expenditure incurred
- or by reference to two-year employment costs for newly created jobs (gross salary costs and the costs of social security contributions).

Creation of new jobs – means the net employment growth at the enterprise, compared with the average figure from the previous 12 months.

4.2. Incentive effect

Eligibility of regional aid depends on the socalled **incentive effect**. Aid is considered to have an incentive effect if, before work on the investment project has started, the beneficiary submits an application for the aid and, in the case of aid MAP 2. Regional aid map for 2007-2013



Source: Own compilation based on the MRD's data, 2010

granted to large enterprises, it must be demonstrated that the aid will result in:

- material increase in the size, scope or the total amount spent by the beneficiary on the project;
- material increase in the speed of completion of the project.

The incentive effect is also fulfilled if, in the absence of the aid, the project would not have been completed in this particular regio (e.g. in a country other than Poland).

4.3. Rules on state aid

Maximum eligible regional aid per one investment project is the product of its intensity in the region (see the regional aid map) and eligible costs: capital expenditure or two-year employment costs – if aid is granted for creation of new jobs [map 4].

In the case of large investment projects (if eligible costs exceed EUR 50 million), the mechanism is

applied to limit the maximum eligible regional aid, according to the formula:

maximum amount of aid = $R \times (50 + 0.50B + 0.34C)$,

where: \mathbf{R} – aid intensity in accordance with the regional aid map; \mathbf{B} – eligible costs between EUR 50 and 100 million; \mathbf{C} – eligible costs above EUR 100 million.

For the period of 2007–2013, the following are the costs eligible for regional aid:

- expenditure on land, buildings and structures and machinery/equipment;
- in the case of SMEs, the costs of preparatory studies and consultancy services related to the investment (up to 50% of all actually incurred costs);
- costs associated with the acquisition of assets other than land, buildings/structures, covered by rental or lease in the form of a finance lease (for at least 5 or 3 years in the case of SMEs) with the purchase commitment upon the expiry of the lease or rental;
- costs of investments in intangible assets, on the provision that in the case of large enterprises, they are taken into account up to 50% of total eligible expenditure.

In the case of projects implemented by large enterprises, new assets should be acquired.

An entrepreneur receiving regional aid (regardless of its form) must ensure sustainability of the project to which the aid was allocated. This implies an obligation to maintain the investment project for at least 5 years, and in the case of small and medium-sized enterprises (further also referred to as SME's) for at

CHART 3. Total amount (in EUR million) broken down by individual voivodeships within the ROP framework



Source: European Commission

least 3 years after the project completion. Where the aid is provided in connection with creation of new jobs as a result of a new investment, then such jobs must be maintained for at least 5 years (or 3 years in the case of SME's), from the date of creation. New jobs should be created within 3 years of the investment completion.

4.4. EU structural funds

For the years 2007–2013 Poland has been granted approximately EUR 67.3 billion under the Cohesion Policy of the European Union. In other words, in the above-mentioned programming period, Poland is the biggest beneficiary of all EU member states.

The amount has been distributed among 5 National Operational Programmes:

- Infrastructure and Environment 41.9% of the total funds (EUR 27.9 billion);
- Human Capital 14.6% of the total funds (EUR 9.7 billion);
- Innovative Economy 12.4% of the total funds
 (EUR 8.3 billion);
- Development of Eastern Poland 3.4% of the total funds (EUR 2.3 billion);
- Technical Assistance 0.8% of the total funds (EUR
 0.5 billion).

The funds granted to Poland under the EU Cohesion Policy have also been distributed among 16 Regional Operational Programmes (ROPs) – 24.9% of the total funds (EUR 16.6 billion) and the Programme of the Objective 'European Territorial Cooperation' (EUR 0.7 billion).

4.5. Programmes targeted exclusively at Eastern Poland

The Development of Eastern Poland Operational Programme (DEP OP) aims at accelerating the pace of social and economic development of 5 voivodeships of Eastern Poland through stimulation of knowledge-based economy, improvement of access to broadband Internet, development of selected metropolitan functions of voivodeship cities, improvement of railway infrastructure and development of tourism [chart 3].

5. Structural funds of the European Union for 2007–2013

Within the framework of funds allocated for the implementation of the European Union regional policy In Poland during 2007–2013 (realized by 2015) direct investment aid is available to entrepreneurs under:

- 1. Innovative Economy Operational Programme (all-Poland programme).
- 2. Development of Eastern Poland Operational Programme (5 voivodeships of Eastern Poland).
- Regional Operational Programmes of individual Voivodeships: the Warmińsko-Mazurskie, Podlaskie, Lubelskie, Świętokrzyskie and Podkarpackie.
- 4. Human Capital Operational Programme (all-Poland and individual voivodeships).
- 5. Rural Development Programme.

5.1. Innovative Economy Operational Programme (IE OP)

IE OP Measure 1.4 Support for goaloriented projects

Beneficiaries: businesses planning the research to invent new products (services) or improve the existing ones.

Supported projects: preparation of the documents necessary to market new products (services).

Intensity and amount of support:

For large enterprises:

- grants for industry-related research up to 50% of eligible expenditure;
- grant for development work up to 25% of eligible expenditure.

For other enterprises:

- grants for industry-related research up to 70% of eligible expenditure;
- grant for development work up to 45% of eligible expenditure;
- amount of co-financing- up to EUR 5 million;

total amount of the project up to EUR 50 million.
 Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP Measure 4.1 Support for the implementation of the outcome of R&D work

Beneficiaries: enterprises continuing R&D work which already received support under Measure 1.4 of the Programme in the form of implementations.

Supported projects: practical application of the outcome of research work at the enterprise so as to improve the existing products or introduce new products (goods or services).

Intensity and amount of support:

- micro-sized and small enterprises up to 70%;
- medium-sized enterprises up to 60%;
- large enterprises up to 50%;
- project amount up to EUR 50 million;
- amount of support up to PLN 20 million.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP Measure 4.2 Stimulating R&D activities of enterprises and support in the area of industrial design

Beneficiaries: small and medium-sized enterprises which conduct business activity and have their registered location, and – in the case of entrepreneurs being natural persons – the place of residence in the territory of the Republic of Poland.

Supported projects: development of R&D activity of enterprises, support in the area of development of an industrial design or a utility model and implementation thereof in the production process.

Amount of support:

- in the area of design:
 - investment-related part PLN 21 million;
 - training-related part PLN 1 million;
 - consultancy-related part PLN 600 000;
 - entrepreneurs in the road transport sector EUR 100 000.

■ in the area of increasing the R&D potential:

- investment-related part PLN 1.4 million;
- training-related part PLN 100 000;
- consultancy-related part PLN 100 000.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 4.3 Technology Credit

Beneficiaries: micro-, small and medium-sized enterprises planning the implementation of own or acquired new technology and commencement of production of new or considerably improved goods, processes or services created with the use of this technology.

Supported projects: investments in implementation of new technologies by granting technology credit to the SMEs, with an option of partial repayment from the Technological Credit in the form of technological bonus. **Amount of support:**

technological bonus – max. up to PLN 4 million. Institution: Bank Gospodarstwa Krajowego (www. bgk. com.pl).

IE OP Measure 4.4 New investment of a high innovation potential

Beneficiaries: manufacturing and service enterprises carrying out new investments and necessary related consulting and training projects, including the acquisition of innovative technological solutions.

Amount of support:

- minimum amount of support PLN 2.4 million;
- maximum amount of the project EUR 50 million;
- maximum amount of support:
- investment-related part PLN 40 million;
- consultancy-related part PLN 1 million;
- training-related part PLN 1 million;

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 4.5 Support for investment of considerable importance to the economy

IE OP 4.5.1 Support for investment in the production sector

Support for: new investments of an innovative nature involving purchase or implementation of a technological solution which has been applied in the world for a period of no more than 3 years or whose sales volume throughout the world as regards products or services based on the technology in a given industry does not exceed 15%, and which meets all the following conditions: eligible expenditure of no less than PLN 160 million, and net increase in jobs of no less than 150 persons.

Intensity of support:

up to 30% of eligible expenditure.

IE OP 4.5.2 Support for investment in the modern services sector

Supported projects: new investments involving purchase of fixed assets and intangible assets and net increase in jobs of no less than 100 persons, leading to an establishment or expansion of:

- shared service centres (e.g. finance, accounting, HR management, administration, banking and insurance resources, market research);
- IT centres (e.g. software development, application testing, network design and implementation, product optimization, database management).

Intensity of support:

■ up to 30% of eligible expenditure.

IEOP 4.5.2 Support for investment in the modern services sector (R&D projects)

Supported projects: new investments related to a commencement or development of R&D activity by organisational units or organisationally separated units starting or developing their activity, involving purchase of fixed assets and intangible assets, and net increase in jobs of no less than 10 persons of R&D staff, leading to an establishment or expansion of R&D centres (e.g. engineering services centres, quality centres)

Intensity and amount of support:

- minimum amount of eligible expenditure from PLN 2 million;
- investment-related part max. 70% of eligible expenditure;
- training-related part up to 45% of eligible expenditure, but no more than PLN 1 million;
- consultancy-related part up to 50% of eligible expenditure, but no more than PLN 600 000.

Institution: Ministry of Economy (www.mg.gov.pl).

IE OP 5.1 Support for development of co-operative relations of supra-regional importance

Beneficiaries: legal persons managing a co-operative relation.

Supported projects: joint ventures of groups of entities aimed at preparation of a joint product or service of an innovative nature and their marketing.

Amount of support:

- investment-related part PLN 20 million;
- consultancy-related part PLN 400 000;
- training-related part PLN 1 million;
- market expansion PLN 600 000.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 5.3 Support for innovation centres

Beneficiaries: Highly specialized business environment institutions providing services with a high market and technology potential, including entities managing science and technology parks, technology incubators, advanced technology centres, productivity centres and other centres providing specialist services for entrepreneurs, in particular for SMEs.

Supported projects: consultancy related to the preparation of the centre's development strategy considering specific needs of entrepreneurs; consultancy and promotion brought about by the centre's development strategy; investments relating to the centre's development strategy in terms of extension or modernization of existing technical infrastructure; promotional activities resulting from the centre's development strategy aimed at promotion of services provided by pro-innovation business environment institutions locally, regionally and internationally.

Minimum amount of the project: PLN 40 million.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 5.4 Management of intellectual property

Beneficiaries: SMEs (for projects 1 and 2); business environment institutions (project 3).

Supported projects:

- covering the costs incurred to obtain industrial property protection;
- support for entrepreneurs covering the costs of the proceedings related to invalidation of a patent,

protection right on a utility design or a registration right or a decision on expiration of a patent, protection right on a utility design or a registration right;

projects related to dissemination of knowledge about profits resulting from protection of intellectual property in enterprises.

Amount of support:

- obtainment of industrial property protection from PLN 2 000 to PLN 400 000;
- enforcement of the protection of an industrial property right – from PLN 2 000 to PLN 400 000;
- dissemination of intellectual property knowledge from PLN 200 000 to PLN 2 million.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 6.1 Passport to Export

Beneficiaries: small and medium-sized enterprises (SMEs).

Supported projects: a package of services for entrepreneurs consisting of: consultancy services, search for and selection of business partners on the target market, participation in trade fairs and exhibition events as an exhibitor, participation in business missions, obtainment of documents necessary to export products.

Amount and intensity of support:

- elaboration of Export Development Plan up to PLN 10 000;
- implementation of Export Development Plan up to PLN 200 000 and up to 50% of total eligible expenditure.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 8.1 Support for business activity in the field of electronic commerce

Beneficiaries: micro-sized and small enterprises conducting business activity for no longer than 1 year since the day of registration and share-holding companies in the process of formation.

Supported projects: implementation of individual projects of the beneficiaries intended to provide services in the electronic form and, possibly, create digital products necessary for the provision of such services; the services will be co-financed for a period of 24 months from the project start date specified in the agreement on the co-financing.

Amount of support:

support for business activity in the area of electronic commerce – up to 80% of the project's eligible expenditure – from PLN 20 000 to PLN 1 million.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

IE OP 8.2 Support for the implementation of electronic business of the B2B type

Supported projects: projects of technical (IT) and organizational nature, leading to implementation of business processes in the electronic form, involving three or The united and the claim is and the claim is a set of the claim.

more co-operating enterprises; the project will be provided with co-financing for a maximum period of 24 months **Amount of support:** from **PLN 20 000** to **PLN 2 million**.

IE OP 8.4 Providing access to the Internet at the "last mile" stage

Beneficiaries: micro-, small and medium-sized enterprises, non-governmental non-profit organizations. Supported projects: development and maintenance of a dedicated data communications infrastructure, created between the nearest or the most effective Internet distribution point and the target group (on the area of a single commune more than one project of this type may be implemented).

Minimum amount of support: PLN 30 000 .

Institution: Implementing Authority for European Programmes (www.wwpe.gov.pl).

5.2. Development of Eastern Poland Operational Programme

DEP OP 1.3 Support for innovations

Beneficiaries: higher education establishments, research units, territorial self-government units, unions and associations, institutions supporting innovation development in the region, entrepreneurs, regional/ local development agencies and foundations, nongovernmental organizations.

Supported projects:

- construction and other construction works and equipment for research institutions along with employment of qualified research staff;
- construction and other construction works and putting into operation of industrial parks, technology parks and incubators (e.g. technological) along with equipment for their laboratories and employment of qualified research staff;
- construction and other construction works and putting into operation excellence centres and technology transfer centres;

- developing infrastructure for research and development units at enterprises along with employment of qualified research staff;
- preparation of investment sites so as to enable setting up of production and modern service zones (e.g. logistic centres, machinery parks, technology parks, incubators, etc.) - comprehensive preparation of land for investment along with construction of internal roads, connecting such roads with the existing communications system and providing utilities.

Eligible costs: minimum PLN 4 million.

Intensity of support: up to 90%.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

5.3. Regional Operational Programmes of Eastern Poland Voivodeships

Regional Operational Programme of the Warmińsko-Mazurskie Voivodeship

WM ROP 1.1.6 Support for new investments for large enterprises

Beneficiaries: large enterprises employing more than 250 employees.

Supported projects: support for new investments as regards:

- process innovation using production methods that are innovative in the region;
- product innovation delivering new or considerably improved goods and services;
- organisational innovation changes in the enterprise's organization.

Innovative solutions are being promoted, i.e. the ones that have not been used in the region before.

Amount of support:

from PLN 300 000 to PLN 4 million(up to 50% of eligible costs);

amount of the project: up to PLN8 million.

Institution: Warmińsko-Mazurska Agencja Rozwoju Regionalnego S.A. in Olsztyn (www.wmarr.olsztyn.pl).



WM ROP 1.1.7 Investment subsidies for micro-enterprises and the SME sector in the field of innovation and new technologies

Beneficiaries: micro-, small and medium-sized enterprises.

Supported projects: implementation of state-ofthe-art solutions into production and distribution processes, and into the enterprise organization; creation of new and modern products by the enterprise; construction or reconstruction of infrastructure, as well as purchase of equipment that will enable to use modern technologies and machinery in the production process. Intensity and amount of support:

- subsidy of to 50% of the project's eligible costs;
- aamount of the project: up to PLN 8 million;
- amount of support: from PLN 20 000 to PLN 2 million.

Institution: Warmińsko-Mazurska Agencja Rozwoju Regionalnego S.A. in Olsztyn (www.wmarr.olsztyn.pl).

WM ROP 1.1.9 Other investments in enterprises

Beneficiaries: micro-, small and medium-sized enterprises.

Supported projects: projects stimulating growth of enterprise competitiveness; subsidies for development investments; investments resulting in creation of new jobs or contributing to the retention of existing ones

Intensity and amount of support:

- amount of support from PLN 10 000 to PLN 1.5 million;
- amount of co-financing up to 50%.

Institution: Warmińsko-Mazurska Agencja Rozwoju Regionalnego S.A. in Olsztyn (www.wmarr.olsztyn.pl).

Regional Operational Programme of the Podlaskie Voivodeship

PV ROP 1.4.1 Micro-enterprises

ROP 1.4.2 Small and medium-sized enterprises

Beneficiaries: priority will be given to solutions that foster savings on raw materials and energy and reduce emissions of harmful substances into the environment. The funds can be used to purchase machinery and equipment or licenses, patents, etc. Aid can be granted only to a new investment (in fixed and intangible assets) in connection with: establishment of a new enterprise, expansion of the existing enterprise, diversification of the enterprise's production by introduction of new, additional products or substantial change in the production process of the existing enterprise.

Intensity and amount of support: maximum level of co-financing:

- up to 50% for enterprises operating in the transport sector;
- up to **50%** for enterprises in the case of de minimis aid.

Maximum amount of co-financing:

- for small and medium-sized enterprises PLN 4 million;
- micro-enterprises PLN 500 000.
- Minimum/maximum amount of support:
- micro-enterprises min. amount of the project PLN 30 000;
- small and medium-sized enterprises min. amount of the project – PLN 100 000.

Maximum amount of eligible expenditure - no limitaion.

Institution: Office of the Marshal of the Podlaskie Voivodeship (www.wrotapodlasia.pl).

Regional Operational Programme of the Lubelskie Voivodeship

LV ROP 1.1 Subsidies for start-up microenterprises

Beneficiaries: the objective is to increase the investment capacity of start-up micro-enterprises implementing projects in the Lubelskie Voivodeship.

Intensity and amount of support: maximum share of EU funds in the project's eligible expenditure is 70%. Minimum amount of the project – PLN 143 000. Maximum amount of the project – PLN 8 million.

Minimum amount of support – PLN 21.5 thousand. Maximum amount of support– PLN 310 000.

For projects with eligible expenditure exceeding **PLN 1 million**, the maximum amount of aid is **PLN 500 000**.

Institution: Office of the Marshal of the Lubelskie Voivodeship (www.lubelskie.pl).

LVROP Measure: 1.2 Investment subsidies for micro-enterprises

Beneficiaries: the measure's objective is to improve the competitiveness of micro-enterprises pursuing business activity for more than 2 years and implementing innovative investment projects in the Lubelskie Voivodeship. The objective will be achieved through the support of investment projects related to modernization of micro-enterprises' product portfolio and technologie.

Intensity and amount of support: maximum share of EU funds in the project's eligible expenditure is

70%. Minimum amount of the project – PLN 42.5 thousand. Minimum amount of support – PLN 30 000. Maximum amount of support – PLN 700 000.

For projects with eligible expenditure exceeding PLN 2 million, the maximum amount of support is PLN 1 million.

Institution: Office of the Marshal of the Lubelskie Voivodeship (www.lubelskie.pl).

LV ROP Measure: 1.3 Investment subsidies for small and medium-sized enterprises

Beneficiaries: Funds may be obtained for projects related to introduction of new or modernization of existing products, implementation of innovative technologies as well as improving organizational and marketing solutions in small and medium-sized enterprises. **Form of support:**

The maximum share of EU funds in the project's eligible expenditure:

- for small enterprises 70%;
- or medium-sized enterprises 60%;

Minimum project value – PLN 143 000. Maximum project value – PLN 8 million. Minimum amount of aid – PLN 85 000. Maximum amount of aid – PLN 1 million. For projects with eligible expenditure exceeding PLN 4 million, the maximum amount of aid is PLN 2 million.

Institution: Office of the Marshal of the Lubelskie Voivodeship (www.lubelskie.pl).

Regional Operational Programme of the Świętokrzyskie Voivodeship

SV ROP 1.1 Direct support for the sector of micro-, small and medium-sized enterprises

Beneficiaries: only innovative projects will be supported or projects that will significantly contribute to the growth of employment. The projects must result in increasing the enterprise's competitiveness in the local or regional market.

Intensity and amount of support: maximum subsidy of 50% of the project's eligible costs. In the case of micro-enterprises (with an exception of businesses operating in the transport sector), it is possible to increase the maximum percentage of the subsidy by 20%.

Minimum eligible expenditure – PLN 20 000 and maximum – PLN 8 million. Minimum subsidy – PLN 10 000, and maximum subsidy: for micro-enterprises – PLN 1.5 million; or small enterprises – PLN 2.4 million; for medium-sized enterprises – PLN 3.999 million.

Institution: Office of the Marshal of the Świętokrzyskie Voivodeship (www.sejmik.kielce.pl).

Regional Operational Programme of the Podkarpackie Voivodeship

PV ROP 1.1 Scheme B: Direct investment subsidies

Beneficiaries: the funds received can be used for all investments that will improve operations, production and management processes at an enterprise. Possible uses: purchase of patents and new technologies that will increase the enterprise's productivity and competitiveness, also as an accompanying element

of the project – installation of systems and devices to prevent environmental pollution.

Amount of support: minimum amount of support – PLN 10 000. Maximum amount of support: micro-sized and small enterprises – PLN 800 000; medium-sized enterprises – PLN 1.2 million.

The maximum amount of support to SMEs for projects having a higher level of innovation:

- innovative projects using solutions that are used in the country for no longer than 4 years – PLN 2 million;
- projects of a high innovation potential using solutions that are used worldwide for no longer than 3 years – up to PLN 5.6 million.

Institution: Office of the Marshal of the Podkarpackie Voivodeship (www.si.podkarpackie.pl).

PV ROP 1.3 Regional system of innovation

Beneficiaries: the objective is to create conditions conducive to economic growth and stimulating the region's innovation potential and knowledge transfer. As part of the Programme investors may establish or improve their R&D facilities (e.g. laboratories) or create a network for cooperation between their enterprise(s) and one or more research units in the region.

Amount of support: subsidy of up to 70% of the project's eligible costs.

Maximum amount of support: up to PLN 30 million. Maximum amount of the project:

- up to PLN 400 000 for projects involving purchase of fixed assets for R&D purpose;
- up to PLN 4 million for investment projects in the field of R&D infrastructure;
- up to PLN 40 million for projects supporting technology parks.

Institution: Office of the Marshal of the Podkarpackie Voivodeship (www.si.podkarpackie.pl).

5.4. Human Capital Operational Programme (all-Poland and individual voivodeships)

HC OP 2.1.1 Development of human capital in enterprises

Beneficiaries: enterprises

Sample projects:

- supra-regional closed projects involving training and consultancy for entrepreneurs based on the enterprises' individual development strategies;
- countrywide open projects involving training and consultancy for entrepreneurs and enterprise staff;
- post-graduate studies for entrepreneurs and enterprise staff.

Minimum amount of the project – PLN 50 000.

Institution: Polish Agency for Enterprise Development (www.parp.gov.pl).

HC OP 4.2 Development of skills of the R&D system staff and increasing awareness of the importance of research to economic growth

Institution: Ministry of Science and Higher Education, Department of Implementation and Innovation.

Beneficiaries: all entities – except for natural persons (not applicable to those conducting business or educational activity under separate regulations). Sample projects:

- improvement of skills of the R&D system's staff in the area of management of research and development work, and putting the outcome of research into business use, projects related to increasing awareness of the importance of and rules governing research and development work for the eco-
- nomy, as well as of the needs of the R&D sector and the economy in this respect;popularization of scientific findings at the tertiary
- education level.

Minimum amount of the project - PLN 50 000.

HC OP 8.1 Development of staff and enterprises in regions

HC OP 8.1.1 Support for development of professional skills and consultancy services for enterprises

HC OP 8.1.2 Support for adaptation and

modernisation processes in regions

Beneficiaries: all entities – except for natural persons. Sample projects:

Sub-measure 8.1.1

- training and consultancy for managerial staff and employees (in the area of, e.g., management, identification of needs with regard to employees' skills, work organization, management of health and safety at work, flexible forms of work, implementation of environment-friendly production technologies, application of IT and communication technologies in the activity conducted);
- consultancy services for micro-, small and medium-sized enterprises, including self-employed persons, in particular with regard to economics, finance, HR management or accounting;
- training, courses and job counselling addressed to adult working persons who, at their own initiative, are interested in gaining new qualifications or improving the ones they have, and in particular to employed persons having low or obsolete qualifications.

Sub-measure 8.1.2

 assistance in the establishment of local partnerships intended to develop and implement strategies for the forecasting and management of economic changes at the local and voivodeship levels;

- support for employers and employees in the enterprises undergoing adaptation and modernization processes;
- retraining courses and career counselling, with focus on facilitating the choice of a new career and acquisition of new professional skills;
- studies and analyses of development trends and forecasting of economic changes in the region.

Minimum amount of the project – PLN 50 000. **Institution:** Regional institutions designated by the voivodeship self-government.

5.5. Rural Development Programme for 2007–2013

Axis 1 Improvement of the competitiveness of the agricultural and forestry sector

Measure 1.2.3 – Increasing the added value of basic agricultural and forestry production

Beneficiaries: the aim of the measure is to increase competitiveness of enterprises in the sector of processing and marketing of agricultural products, conditioned by the increase in added value, production quality, reduction of costs and development of new products, production processes and technologies, as well as improvement of the production conditions taking into account existing or newly introduced standards. The measure is also aimed at strengthening the position of agricultural producer groups in the channel of product sales, as well as ensuring their wider participation in generating added value of agricultural production by supporting investments in the processing of agricultural products.

Amount of support: maximum amount of aid granted during the RDP period to one beneficiary is PLN 20 million. TThe amount of aid granted for the implementation of one project may not be less than PLN 100 000. The maximum level of aid is:

- 25% of costs of an eligible investment carried out by an enterprise other than SME;
- 40% of costs of an eligible investment carried out by a SME;
- 50% of costs of an eligible investment carried out by a SME

 which procures raw materials under long-term contracts concluded with groups of agricultural producers, fruit and vegetable producer groups granted preliminary recognition or recognized fruit and vegetable producer organizations;

 which is registered as a group of agricultural producers or their union, a fruit and vegetable producer group granted preliminary recognition or a recognized fruit and vegetable producer organization;

 which carries out a project on the processing of agricultural products for energy purposes.

Institution: Agency for Restructuring and Modernisation of Agriculture (www.arimr.gov.pl).

Axis 3 Quality of life in rural areas

Measure 3.1.2 – Establishment and development of micro-enterprises

The objective of the measure is to increase economic competitiveness of rural areas, and develop entrepreneurship and the labour market, and consequently, increase employment in rural areas.

The amount of aid granted to the operation may not exceed:

- PLN 100 000 if the business plan provides for creation of at least one and less than two jobs (FTE, annual average), which is justified by the material scope of the operation;
- PLN 200 000 if the business plan provides for creation of at least two and less than three jobs (FTE, annual average), which is justified by the material scope of the operation;
- PLN 300 000 if the business plan provides for creation of at least three jobs (FTE, annual average), which is justified by the material scope of the operation.

Maximum amount of aid granted during the Programme period to one beneficiary may not exceed **PLN 300 000.** Maximum financial aid – **50%** of the operation's eligible costs.



6. Special Economic Zones (SEZs) in Eastern Poland

MAP 3. Special Economic Zones (SEZs) in Eastern Poland



Source: Own compilation based on SEZs websites, June 2010



There are 14 Special Economic Zones in Poland, 5 of which are located in Eastern Poland: Mielec, Tarnobrzeg, Warmia and Mazury, Suwałki and Starachowice (actually, the first zone established in Poland in 1995 was located in the Macroregion Eastern Poland - Euro-Park Mielec). The idea behind the creation of the zones was to accelerate regional economic development, to use of postindustrial assets and infrastructure, to create new jobs - especially in regions threatened by structural unemployment and to attract foreign investors to Poland. Based on Poland's arrangements with the European Commission, the zones will operate in the present shape until 2020. The main tool for attracting investors - and a very effective one in the opinion of investors themselves - are tax incentives in the form of CIT exemptions as per the regional aid map, which specifies the maximum amount of support for projects implemented in individual voivodeships in Poland (for Eastern Poland it is 50%, but the SME sector businesses are entitled to recover 70% and 60% of their capital expenditure respectively). The exemption continues in subsequent years, until the entrepreneur recover 70% and 60% of their capital expenditure respectively). The exemption continues in subsequent years, until the entrepreneur recovers 50% (or 70% or 60%, depending on the size of an investing company) of its capital expenditure. Each zone is divided into sub-zones, so potential investors have an array of locations to choose from. Apart from tax exemptions, investors willing to invest in the zones can expect that they will be offered a site ready for investment purposes, with all necessary utilities in place, and they also can count on assistance in starting the investment project [Map 3].

All special economic zones in Poland taken together occupy the area of 13 336.3 ha, of which 5 zones located in the Macroregion Eastern Poland, stretch over 3 925.51 ha (over 37% of the total land occupied by Polish SEZs). So it is Eastern Poland that offers the largest territorial potential for investors. Most of the zones' investment areas lie within the territory of 5 voivodeships of Eastern Poland (except for approx. 655 ha located in macroregions other than Eastern Poland).

Capital expenditure incurred by investors in all 5 zones of Eastern Poland exceeded PLN 15.75 billion, and created almost 49 000 new jobs. The biggest number of jobs was created by investors in Tarnobrzeg and Mielec zone (23 335 and 11 953 respectively). Due to very attractive investment conditions, the zones attract both Polish and foreign businesses, while the latter actually predominate in the Eastern Poland Macroregion's special economic zones.

6.1. Warmia and Mazury Special Economic Zone

Situated in the north-eastern region of Poland, it covers the total area of 914.5 ha, of which 302.3 ha available for investment. The area consists of 24 sub-zones located within the following towns and communes: Barczewo, Bartoszyce, Ciechanów, Dobre Miasto, Elbląg, Iława, Iłowo, Lidzbark Warmiński, Mława, Morąg, Mrągowo, Nidzica, Nowe Miasto Lubawskie, Olecko, Olsztyn, Olsztynek,

Orzysz, Ostrołęka, Ostróda, Pasłęk, Pisz, Piecki, Szczytno and Wielbark.

As of 30 September 2012, 57 entrepreneurs, had valid business licenses to conduct business in the zone; capital expenditure amounted to PLN 3 billion and 12 067 work places were created. Two largest enterprises running business activities in the zone are Michelin Polska S.A. and LG Electronics Mława Sp. z o.o.



Registered location: Olsztyn

TABLE 11. Major investors in the Warmia and Mazury SEZ

Investor	Country of origin	Sector
Michelin Polska S.A.	France	automotive
LG Electronics Mława Sp. z o.o.	South Korea	electronics
Swedwood Poland Sp. z o.o	Sweden	wood
Wydawnictwo Bauer Sp. z o.o.	Germany	printing
Wójcik Fabryka Mebli Sp. z o.o.	Poland	furniture
Cetco Poland Sp. z o.o.	Netherlands	construction materials
Fabryka Mebli Szynaka Sp. z o.o.	Poland	furniture
Bruss Polska Sp. z o.o.	Germany	metal
DFM Sp. z o.o.	Poland	furniture
Fabryka Mebli Taranko Aleksander Taranko	Poland	furniture

Source: Own calculations based on PAliIZ databases

6.2. Suwałki Special Economic Zone

It is located in the Voivodeships: Podlaskie, Warmińsko-Mazurskie and Mazowieckie. It covers the total area of **342.7662 ha,** of which 106.16 ha available for development, in six sub-zones: Suwałki, Ełk, Gołdap, Białystok, Grajewo and Małkinia Góra. As of the end of 2012 there were **69 enterprises** operating in the zone, both Polish and foreign, which created more than **5 700 new jobs** and made capital expenditure of more than **PLN 1.7 billion.**



Suwałki Special Economic Zone Registered location: Suwałki Voivodeships: Podlaskie, Warmińsko-Mazurskie and Mazowieckie

TABLE 12.	Major	investors	in the	Suwałki SEZ	4
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Investor	Country of origin	Sector
Pfleiderer MDF Sp. z o.o.	Germany	wood
Rockwool Polska Sp. z o.o.	Denmark	construction
Porta KMI Poland Sp. z o.o	Poland	wood
Impress Decor Polska Sp. z o.o.	Austria	printing
Malow Sp. z o. o.	Poland	metal
Mispol S.A.	Poland	food
Iryd Sp. z o.o.	Poland	metal, wood
Aquael Sp. z o.o.	Poland	precision engineering
Cezar D. Niewiński	Poland	plastics
Reckman Sp.j.	Poland	clothing

Source: Own calculations based on PAliIZ databases

6.3. Tarnobrzeg Special Economic Zone Euro-Park Wisłosan

It has sub-zones in as many as 6 voivodeships, including 4 in Eastern Poland (Podlaskie. Podkarpackie, Świętokrzyskie and Lubelskie) and in Mazowieckie and Dolnośląskie. The total zone area is **1632.31 ha**, of which 535.7 ha available for development in 19 subzones: Tarnobrzeg (149.91 ha), Stalowa Wola (277.35 ha), Nowa Dęba (113.60 ha), Radom (151.55 ha), Staszów (104.12 ha), Jasło (58.06 ha), Wrocław-Kobierzyce (410.68 ha), Przemyśl (81.49 ha), Janów Lubelski (18.51 ha), Siedlce (65.40 ha), Łuków (40.49 ha), Tomaszów Lubelski (10.56 ha), Węgrów (29.33 ha), Nowe Miasto nad Pilicą (15.13 ha), Kraśnik (23.48 ha), Przasnysz (55.07 ha), Horodło (5.3 ha), Ryki (4.45 ha), Łapy (11.95 ha), Mińsk Mazowiecki (5.78 ha)

As of 30 June 2012, **224 permits** were issued, of which 34 for companies with the foreign capital participation, **28 448 new jobs** were created and capital expenditure exceeded **PLN 7.0 billion**.





Tarnobrzeg Special Economic Zone Euro-Park Wisłosan Registered location: Tarnobrzeg

Voivodeships: Podkarpackie, Podlaskie, Świętokrzyskie, Lubelskie, Mazowieckie and Dolnośląskie

TABLE 13. Major investors in the Tarnobrzeg SEZ Euro-Park Wisłosan

Country of origin	Sector
Republic of Korea	production of TVs and LCD monitors
Germany	production of aluminium wheel rims
Poland	production of pharmaceuticals
Poland	electronics
Republic of Korea	electronics
Poland	printing house, printing services
Japan	electronics
Poland	metal
Poland	production of paving blocks
Poland	defence industry
	Country of origin Republic of Korea Germany Poland Poland Republic of Korea Poland Japan Poland Poland Poland

Source: Own calculations based on PAlilZ databases

6.4. Euro-Park Mielec Special Economic Zone

It is located mainly in south-eastern Poland, and covers the total area of **1 246 ha** in 20 subzones, of which 396.5 ha available for development, located in the sub-zones within the following cities/towns and communes: Mielec, Rzeszów, Głogów Małopolski, Trzebownisko, Lublin, Ropczyce, Ostrów, Zamość, Leżajsk, Jarosław, Laszki, Sanok and Zagórz, Lubaczów, Kolbuszowa, Szczecin, Lubartów and Krosno.

As of 31 December 2012, **231 permits** had been issued to conduct a business activity in the zone, while investors made **capital expenditure of PLN 5.4 billion** and created **over 20 000 new jobs**.



Euro-Park Mielec Special Economic Zone Registered location: Mielec Voivodeships: Podkarpackie, Lubelskie, Małopolskie and Zachodniopomorskie

TABLE 14. Major investors in the Euro-Park Mielec SEZ

Investor	Country of origin	Sector
Polskie Zakłady Lotnicze Mielec Sp. z o.o.	USA	aviation
MTU Aero Engines Polska Sp. z o.o.	Germany	aviation
Borgwarner Turbo Systems Poland Sp. z o.o.	USA	automotive
Lear Corporation Sp. z o.o.	USA	automotive
Kirchhoff Polska Sp. z o.o.	Germany	automotive
Firma Oponiarska Dębica S.A.	USA	automotive
Kronospan Mielec Sp. z o.o.	Austria	wood processing
Ball Packaging Europe Lublin Sp. z o.o.	USA	packaging
Bury Sp. z o.o.	Poland	electronics
BRW Sp. z o.o.	Poland	furniture
Goodrich Aerospace Poland Sp. z o.o.	USA	aviation

Source: Own calculations based on PAliIZ databases

6.5. Starachowice Special Economic Zone

It is located within the Świętokrzyskie Voivodeship, while it also has subzones in the Lubelskie, Mazowieckie, Łódzkie and Opolskie Voivodeship. The zone covers the total area of **612.9 ha**, of which 225.38 ha remaining for development (as at the end of January 2011) in the following sub-zones: Starachowice, Ostrowiec Świętokrzyski, Skarżysko-Kamienna, Końskie, Stąporków, Suchedniów, Morawica, Szydłowiec, Puławy, Iłża, Tułowice, Mniszków, Sędziszów and Kielce.

At the end of Q3 2012, there were 71 active business liceces in the zone, 7 228 new jobs were created, while investors' capital expenditure amounted to PLN 1.6 billion.





Starachowice Special Economic Zone Registered location: Starachowice Voivodeships: Świętokrzyskie, Lubelskie, Mazowieckie, Łódzkie and Opolskie

TABLE 15. Major investors in the Starachowice SEZ

Investor	Country of origin	Sector
Biella Szydłowiec Sp. z o.o./Biella-Neher AG	Switzerland	office supplies
Cerrad Sp. z o.o.	Poland	ceramic
Cersanit II S.A.	Poland	sanitary ceramic ware
Gerda 2 Sp. z o.o.	Poland	metal
Gerda 3 Sp. z o.o.	Poland	metal
MAN Bus Sp. z o.o./MAN Nutzfahrzeuge Gruppe	Germany	automotive
Orizzonte Polska Sp. z o.o.	International	metal
RR Donnelley Starachowice Sp. z o.o./RR Donnelley	USA	printing
Starpol II Sp. z o.o.	Poland	electrotechnical
Star-Dust Sp. z o.o.	Poland	ceramic
Ceramika Nowa Gala II Sp. z o.o.	Poland	ceramic
Star-Gres Sp. z o.o.	Poland	ceramic
Alpol Gips Sp. z o.o.	Poland	construction materials
Nova Ceramika Sp. z o.o.	Poland	ceramic
Ceramika Końskie Sp. z o.o.	Italy	ceramic
Kaye Aluminium Opole Sp. z o.o.	Spain	metal
Valdi Ceramika Sp. z o.o.	Poland	ceramic
Zakłady Azotowe Puławy S.A.	Poland	chemical
Air Liquide Polska Sp. z o.o	France	chemical
Fabryka Kotłów Sefako S.A.	Poland	metal

Source: Own calculations based on PAlilZ databases

7. Science and Technology and Industrial Parks

There are more than 36 technology parks in Poland - either already operating or at an advanced stage of development. The most resilient group comprises 20 parks. In total they host 523 institutions and 18 science and research units. The parks employ more than 16.5 thousand people. The twenty most dynamic parks cover the area of almost 1.3 thousand ha, of which developed areas account for almost 550 000 m². This figure represents just above 3% of their total area. The largest parks are technology parks located in Kraków, Bełchatów and Płock, and 'Aeropolis' park in the Podkarpacie Region. Their areas equal respectively to: 416 ha, 384 ha, 200.4 ha and 118 ha. They represent 88% of the total area occupied by the twenty most resilient parks. Apart from 'Aeropolis', the group of the 20 largest parks also includes one more park located in the Macroregion Eastern Poland, namely 'Poland- East' Science and Technology Park in Suwałki. It is not as big as 'Aeropolis' though: the park in Podkarpacie covers the area of 118 ha (of which just under 2% is used), and the park in Suwałki covers the area of 8.6 ha (of which 0.55% is used). The park in Podkarpacie is also the biggest in terms of employment: 618 persons compared to 80 persons in the Suwałki Park.

7.1. Kielce Technology Park

The Kielce Technology Park was created based on the Kielce Technology Incubator established in 2008. Since its inception, the incubator has worked with small and medium-sized enterprises as well as the local self-government. In July 2009, by way of resolution of the Kielce City Council, the entity changed its name to the Kielce Technology Park. The park was created, among others, in order to support newly created in-



novative companies. It is focused on the development of academic enterprise, supporting relationships between science and economy as well as pre-incubation and incubation of enterprises which originate at universities. The park concept assumes operation of two separate organizational units: Technology Incubator (for start-up businesses) and Technological Centre (for companies leaving the Technology Incubator at the expansion stage or for third-party enterprises intending to start business in Kielce).

Kielecki Park Technologiczny ul. Olszewskiego 6 25-663 Kielce phone/fax: +48 (41) 278 72 00 phone: +48 (41) 278 72 01

7.2. Lublin Science and Technology Park

Lublin Science and Technology Park was established in May 2005. The Park shareholders are: the selfgovernment of Lubelskie Voivodeship and University of Life Sciences in Lublin. The Park with related infrastructure cover the total area of more than 10 000 m².

The mission of Lublin Science and Technology Park is to support the development of Lubelskie Voivodeship through the creation of an institutionalized platform enabling the cooperation of Lublin universities with the business community. The main goal of the establishment is to support projects in which research findings are put into business use so as to improve innovativeness of enterprises in the Lublin region. In 2009, an official opening of the first Park facilities took place. Current tenants include: Laboratorium Badań Genetycznych Sp. z o.o. (research on human chromosomes in reproductive failures, detection of genetic defects and susceptibility to various genetic diseases), Central Apparatus Laboratory of the University of Life Sciences (conducting certified research and measuring work, including a broad spectrum of physical and chemical measurements, training in lab analysis, Lubelskie Centrum Konsultingu Sp. z o.o. (consulting services, business services for SMEs, international trade support, training activities), VADO Sp. z o.o. (production of software and specialized data communications systems, development and production of electronic devices, specialist advice), KTI Konsulting (consulting and training services in the field of raising third-party financing, in particular grants from the EU structural funds), Centrum Innowacji i Transferu Technologii Lubelskiego Parku Technologicznego Sp. z o.o. (post-production, animation and visual effects services for advertising, TV, film and new media projects, production of commercials, music videos and feature-length films).

Lubelski Park Naukowo-Technologiczny ul. Dobrzańskiego 3 20-262 Lublin phone: +48 (81) 534 61 00 fax: +48 (81) 531 85 48 e-mail: biuro@lpnt.pl www.lpnt.pl

7.3. Podkarpackie Science and Technology Park "Aeropolis"

The Park was meant as one of the instruments to improve competitiveness of the economy in the Podkarpacie region by implementing modern technological solutions and management of knowledge and capital resources. The Park (located in Rzeszów on the area of 118 ha), was supposed to provide a platform where innovative scientific ideas are transformed into modern technological solutions to be implemented by economic entities. In May 2003, the selfgovernment of Podkarpackie Voivodeship, the city of Rzeszów, Rzeszowski Poviat, Rzeszów University of Technology and the University of Rzeszów signed an agreement on the establishment of the Podkarpackie Science and Technology Park 'Aeropolis'. The PSTP 'Aeropolis' management was entrusted to Rzeszowska Agencja Rozwoju Regionalnego S.A.

The Park's strategic aims are: activation of brownfields, creation of investment infrastructure and attracting investors, effective development of available facilities and areas and provision of auxiliary services – mostly for PSTP 'Aeropolis' businesses, increasing competitiveness and innovation of enterprises operating in the voivodeship, development of infrastructure to activate local and regional enterprise, exploiting the potential of the Park's tenants and business engaged in manufacturing of complementary products. Besides, the Park seeks to increase the number of university graduates taking up self-employment (academic pre-incubator), develop technologies and stimulate research activities.

So far, the following companies have invested in the Park: Opatem S.A. - a manufacturer and integrator of systems using e-card technologies, Borg Warner Turbo Systems - a manufacturer of turbocompressors, Ultratech Sp. z o.o. - a manufacturer of parts and components for the aircraft and automotive industry, Yanko Sp. z o.o. - a packaging manufacturer or MasterProfi Sp. z o.o. - a manufacturer of professional vacuum cleaners. The largest and the most important investment is the plant of German MTU Aero Engines, opened in May 2009 within the Park premises in Jasionka near Rzeszów. The company invested EUR 50 million euro. The plant produces components for aircraft engine turbines. So far the company has employed as many as 200 local inhabitants and ultimately this number is supposed to reach 400.



Management Center ul. Szopena 51 35-959 Rzeszów phone: +48 (17) 867 62 06 fax: +48 (17) 852 06 11 Investor Center phone: +48 (17) 852 43 76 fax: +48 (17) 852 43 74 e-mail: aeropolis@rarr.rzeszow.pl www.aeropolis.com.pl

7.4. Stare Miasto Industrial Park

In August 2005, the Council of the Commune of Leżajsk adopted a resolution on the establishment of the Industrial Park under the name of Stare Miasto - Park. One year later it signed a contract with the Industry Development Agency (Agencja Rozwoju Przemysłu S.A.) in Warsaw for completion of the comprehensive infrastructure within the Industrial Park and construction of 3 production halls. In 2007, in accordance with the regulation of the Council of Ministers, part of the Park land was granted the status of Special Economic Zone Euro-Park Mielec. Stare Miasto Industrial Park is located within the Commune of Leżajsk, in Stare Miasto (Zone A) and Wierzawice (Zone B) of the total area over 35 ha (the ultimate Park area is planned at 200 ha). Until now, the Park's investors have been mainly Polish companies such as SGS Eko-Projekt Sp. z o.o., Emka Mirosław Klosowski, Iglobud Leżajsk Jerzy Szostak.

Park Przemysłowy Stare Miasto Wierzawice 874 37-300 Leżajsk phone/fax: +48 (17) 242 60 94 e-mail: sm-park@sm-park.pl www.sm-park.pl RENEWABLE ENERGY SOURCES SECTOR



7.5. Mielec Industrial Park

Mielec Industrial Park is an investment area established in March 2005 by the Mielec City Council in order to use the post-restructuring assets of WSK-PZL Mielec. The management of Mielec Industrial Park was entrusted to Agencia Rozwoju Regionalnego "MARR" S.A. based on the agreement with the city of Mielec. About 100 ha of the Park, with complete service infrastructure and ready for new project launches, is located within a special zone, authorizing the willing investors to apply for investment tax credits of Euro-Park Mielec Special Economic Zone in Mielec. Current investors include: Husqvarna - a Swedish manufacturer of electrotechnical equip-ment, Regom Polska - a manufacturer of elements for the plumbing, automotive and aircraft industry, First Company from Germany - a manufacturer of women's wear, mainly for the German market and RD Precision - a manufacturer of aircraft parts and components.

Mielecki Park Technologiczny Agencja Rozwoju Regionalnego MARR S.A. ul. Chopina 18 39-300 Mielec phone: +48 (17) 773 82 56 fax: +48 (17) 788 32 62 e-mail: marr@marr.com.pl www.marr.com.pl

7.6. Puławy Science and Technology Park

The project of Puławy Industrial Park (PIP) was formed in January 2003 as a joint initiative of Zakłady Azotowe Puławy S.A. and the Municipal Commune of Puławy. In April 2003, the Puławy City Council adopted a resolution on joint actions and exemptions from property tax for the PIP investors. Today, the Park's area equals to 700 ha. About 570 ha is owned directly by Zakłady Azotowe Puławy S.A.; another 99 hectares is a sub-zone of the Special Economic Zone - Starachowice (the area within the competence of the Management Board of SSE Starachowice S.A. and the Management Board of Zakłady Azotowe Puławy S.A.). 130 ha come under administration of the City of Puławy. In 2008, Zakłady Azotowe Puławy S.A., the City of Puławy, Fertilizer Research Institute, Institute of Soil Science and Plant Cultivation, Puławy Enterprise Centre Foundation and representatives of self-government authorities signed a letter of intent concerning transformation of the existing park into the Puławy Science and Technology Park. Current Park investors include: Kozap - railway forwarding and transport, Elza - power engineering lines and machinery, Medical - comprehensive medical services and PIA-ZAP authorization of production processes.

Puławski Park Przemysłowy Zakłady Azotowe Puławy S.A. Al. Tysiąclecia Państwa Polskiego 13 24-110 Puławy phone: +48 (81) 565 30 00 fax: +48 (81) 565 28 56 e-mail: ppp@azoty.pulawy.pl www.park-pulawy.pl

7.7. "Poland-East" Science and Technology Park

The mission of "Poland-East" Science and Technology Park in Suwałki is to increase the socio-economic cohesion and improve the economic development of the North-Eastern Poland Macroregion and - as a result - of Podlaskie Voivodeship by promoting entrepreneurship fostering technology-based knowledge and by making best use of opportunities for international cooperation. The Park, covering the area of 8.6 ha, opened in 2004. In 2005-2008, parallel to the preparation of infrastructure, the Park managed projects related to the development of new technologies in the region, such as: "'Poland-East' Science and Technology Park as the loadstar for new innovation technologies for the economic development of the Podlasie region", "Innovative potential of the Suwałki sub-region for the development of new technologies infrastructure and information society" or E-cluster "Healthy Life Valley". In 2012 the Park expanded and a Technology Incubator was created with 4 scientific and research laboratories (located in one building), a hall for logistic and technological processes. There are also plans to create an International Eastern Centre for Innovation.

Partners of the Park include: Warsaw University of Technology, the City of Suwałki, University of Warmia and Mazury, University of Białystok, National Institute of Telecommunications and the State Higher Vocational School in Suwałki. Park Naukowo-Technologiczny Polska-Wschód ul. Noniewicza 10 room 426 16-400 Suwałki phone: +48 (87) 562 84 77 fax: +48 (87) 562 84 78 e-mail: park@park.suwalki.pl www.park.suwalki.pl

7.8. Świdnik Regional Industrial Park

The industrial park was created as a result of property restructuring and business reegineering of PZL-Świdnik S.A. Some of the park area (approx. 50 ha) is located on the company area. The Park is based on the existing production and technology infrastructure, which was separated and excluded from the manufacturing process of PZL-Świdnik S.A. The Industrial Park is meant to attract to Świdnik both large and small investors that would like to start business in this region. The majority of real estate and industrial facilities are already used by newly established businesses or enterprises that simply transferred their activity to the Park area.

Shareholders include: Zakłady PZL-Świdnik S.A., the City of Świdnik, Zakład Narzędziowy in Świdnik, State Treasury and the Poviat of Świdnik. At the moment, 41 companies have based their operations in the Park, employing approx. 1000 people, to mention only a few: SMF Poland - plastic industry, Advanced Technology Centre OBR - construction of machinery and equipment, pneumatic drive control, automation of production processes, Elto - electrical systems in the power engineering sector, ISK Engineering - a supplier of paints, plasters and insulation systems, Arctica BB - insulating materials, composite panels and cold storage doors. The Industrial Park has a very good internal and external communication infrastructure (the road system allowing for access by TIR lorries of unlimited load capacity; the railway siding with unloading ramps plus close proximity to the Świdnik airport, which is going to be modernized and expanded in the future - data based on the development plans of the Lublin region). The company "Port Lotniczy Lublin w Świdniku" may also be joined by the enterprises starting their business in the Park.

Regionalny Park Przemysłowy Świdnik

Al. Lotników Polskich 1 21-045 Świdnik phone: +48 (81) 722 60 22 fax: +48 (81) 722 66 52 e-mail: biuro@park.swidnik.pl www.park.swidnik.pl

7.9. Industrial Park in Zambrów

Industrial Park in Zambrów opened in January 2006. It was created on the basis of the former Zakłady Przemysłu Bawełnianego Zamtex (Cotton Industry Plant Zamtex), taken over by the State Treasury, and then transferred to the municipal authority of the Town of Zambrów. The project was completed directly by a municipal company – Zarząd Nieruchomościami Sp. z o.o. Once the application for funding from the European Regional Development Fund under the ICE SOP was accepted, the City of Zambrów contributed the real estate to the Company, which was considered as the local authorities' contribution the project.

The Park is located on the plot of 40 577 m². Its managing authority is Zarząd Nieruchomościami w Zambrowie Sp. z o.o.

Zambrowski Park Przemysłowy – Zarząd Nieruchomościami w Zambrowie Sp. z o.o.

Aleja Wojska Polskiego 27 A 18-300 Zambrów phone: +48 (86) 271 36 54 fax: +48 (86) 276 12 40 e-mail: znwzambrowie@interia.pl www.zpp.info.pl



Published by: Polish Information and Foreign Investment Agency 12 Bagatela Street, 00-585 Warsaw tel. +48 22 334 98 00; fax +48 22 334 98 86 www.paiz.gov.pl www.whyeasternpoland.eu

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