

R&D market in Poland

Marek Dziura

Cracow University of Economics, Poland

Key Words

Research and development, R&D sector, innovation, special economic zones,

Abstract

The potential of the Polish research and development (R&D) sector is substantial, mainly due to highly-developed specialist personnel. It is expected that in several years there will be an increased interest in opening R&D centres, similar to the ones which happened in the BPO sector. It is hard not to mention the necessity for commercialising research results and the cooperation of the entire sector with entrepreneurs. The largest companies in the world have already started opening R&D centres in Poland, benefitting from the first mover advantage, taking advantage of the availability of the best personnel and cooperating with existing R&D units.

The capabilities of the Polish market are proven by the potential of its human resources – the current number of students is 1.9 million people, over 420 thousand graduates a year, and already 120 thousand people working in the R&D sector. This potential is confirmed by the successes achieved by Polish students in different competition events. 717 enterprise and innovation centres have been identified in Poland, including 318 training, consulting and information centres. Research and development activity is becoming increasingly financed by the private sector. Interest among global actors is also growing.

At present, the relatively low number of research results confirmed by patents is still a problem for Polish science; however, the specification of clear goals and cooperation with entrepreneurs can change that. In the last few years, there has been a boom in science and technology parks, in which a growing number of innovative companies are being established. The parks are a convenient place for cooperation with universities. Polish and foreign companies are more and more willing to use this opportunity. In years to come the rapid development of the research and development sector is likely to occur, in particular in the IT, electronic and information industry, on the condition that supporting activities are provided.

Foreword

In the post-crisis Europe, Poland possesses a scarce commodity – economic stability. In the eyes of foreign economic elites, media and politicians, Poland has suddenly become a country much more attractive than before the crisis. Investors from modern services as well as the research and development sector dominate among those, with whom the Polish Information and Foreign Investment Agency has the pleasure of cooperating. Poland is no longer just a provider of an inexpensive work force, but more often also provides highly qualified staff. Young people commanding foreign languages, with diplomas from renowned universities, constitute an intellectual potential every company dreams about. Poland possesses this treasure and offers it to national businesses as well as foreign investors.

Polish universities are opening up to business and more often adapt their offer to companies' specific needs. The existing clusters are examples of the successful cooperation of science and business. The Polish world of science comprises over 400 institutions of higher education, almost 2 million students, 200 research and development facilities and almost 100 thousand science and research employees.

Science and research undertakings can count on financial support provided by the government, flowing as a wide stream from European funds as well as the support offered by science institutions. Stability, educated staff, science potential and financial support – Poland has all what companies need for the development of R&D activities. I believe this publication will convince you to look more carefully on research and development in Poland.

Supporting research and development activities should be a perpetual priority for Poland. R&D centres are the most valuable form of foreign direct investment. They allow for creating stable work places, while innovative solutions prepared in research and development centres contribute to the growth of the competitiveness of the entire economy. It is worth remembering that strengthening Poland's position as an attractive location for R&D investments cannot be carried out in detachment from the range of state aid instruments designed to support activities of this kind. The present report comprehensively presents and analyses the current R&D support instruments available in Poland. Thus far, Poland has effectively used funds received from the European Union as the primary source of co-financing the deployment of innovative solutions and the promotion of research and development activities.

Unfortunately, at the present stage, a significant part of the funding coming from the European Union is about to be depleted. Therefore it seems that the continuation of such kind of instruments within the new financial perspective of the European Union For years 2014-20 and within the scope of national state aid instruments is the key condition for the continued development of innovation in our country.

As it is shown by the examples of completed projects presented in this report, this kind of support is used very effectively by various businesses from various industries. There is no doubt that without state funds many R&D projects would not be completed. This makes it even more important to ensure that the awareness of the available support instruments for R&D activities among the native entrepreneurs is as high as possible. This, in particular, is the purpose of the present publication.

1. R&D market in Poland

Economic conditions for R&D activity in Poland

The economic potential of Poland is appreciated by foreign investors, as evidenced by the steady inflow of foreign capital to locate the manufacturing plants, services centres and R&D units in Poland. In the current economic situation, especially in the countries of Southern and Western Europe, Poland seems to stand a good chance to become a leader of economic stability and predictability, which should further boost the interest of potential investors.

Poland was the only European country not to have experienced the economic downturn in 2009. While in Europe GDP fell by an average of 4.3%, Poland's economy grew at a rate of 1.6%. The following year, when other European economies were only beginning to come out of the recession, Poland recorded a GDP growth of 3.8 % (Central Statistical Office). Now, when the so-called 'second wave of the crisis' is gaining momentum, and some European countries face the threat of bankruptcy, the forecasts of the European Commission (EC) provide for a 4% increase in Poland's GDP in 2011. According to data of World Economic Forum, Poland currently ranks first in the world in terms of macroeconomic stability, as measured by the rate of inflation year on year (Global Competitiveness Report 2011, World Economic Forum)

These data clearly indicate that Poland:

- has a healthy economy based on solid macroeconomic foundations;
- offers a secure and stable environment for business.

Poland, with a 38-million domestic market, ranks 7th in the European Union (EU) and 20th in the world in terms of economic potential, measured by GDP in purchasing power parity terms.¹ The seventh-largest economy in the EU has a significant potential for the development of R&D sector. It has not only been driven by the rapid economic growth in recent years, being one of the highest in the EU, but also by the increased supply of highly skilled professionals to join the research teams.

Table 1. Selected economic data for the Polish economy

Name of indicator	2008	2009	2010	2011
GDP development rate (%) (EU 27 average)	5.1 (0.5)	1.6 (- 4.3)	3.8 (1.8)	4.0 (1.8)
Unemployment rate (%) (EU 27 average)	7.1 (7.1)	8.2 (9.0)	9.6 (9.7)	10.2 (11.2)
Harmonized inflation rate (%) (EU 27 average)	4.2 (3.7)	4.0 (1.0)	2.7 (2.1)	2.8 (2.2)
Foreign direct investment as % of GDP (EU 27 average)	0.8 (3.1)	1.2 (2.4)	1.0 (0.9)	1.3 (1.0)
Average monthly gross wages in enterprises sector (PLN)*	3186	3325	3435	3565

* 1 USD = 3.2 PLN

Source: Central Statistical Office, Eurostat.

In comparison with other countries in the region, Poland stands out positively in terms of foreign direct investments (FDI), including investments in R&D. In 2004-2009, FDI inflows totaled USD 92 billion, which was one of the best results in this part of Europe (see figure below).

In 2010, under conditions of high uncertainty in financial markets, FDI inflows to Poland amounted to USD 6.9 billion, which ranked Poland first in the region. These figures are an indication of confidence that investors have in Poland, considering it as a secure place to do business, and to make investments in R&D sector in particular.

Offering high efficiency of labour costs and availability of qualified scientific staff, Poland is one of the most attractive locations in the world for investment, including investment in R&D. As at 30 April 2011 in Poland there were 282 services centres with foreign capital, of which 77 are research and development centres (Economy Innovation and Efficiency Strategy (SIEG), Ministry of Economy, Warsaw 2011). High investment attractiveness of Poland is confirmed by the numerous rankings of the national economies competitiveness, in which Poland is steadily improving its position

Table 2. Poland's position in international rankings of economic competitiveness

Ranking name	Current rank
Top host economies for FDI	China

¹ Economy Innovation and Efficiency Strategy (SIEG), Ministry of Economy, Warsaw 2011

<p>UNCTAD World Investment Report 2011</p> <p>[Ranking of the most attractive countries for the location of FDI - Poland moved up position 12 occupied in the previous edition of the ranking]</p>	<p>USA India Brazil Russia POLAND Indonesia Australia Germany Mexico</p>
<p>Doing Business 2011</p> <p>[Ranking of the World Bank reflects the freedom of establishment - Poland moved up from position 73 occupied in the previous edition of the ranking]</p>	<p>Singapore Hong Kong New Zealand United Kingdom USA Denmark Canada Norway Ireland 70. POLAND</p>

Source: Based on specified rankings.

An important factor increasing the investment attractiveness of the Polish economy is the fact that, being an EU member state, Poland has adapted a wide range of domestic business regulations to the EU requirements and guidelines. This applies in particular to the R&D sector, where Poland has implemented a number of solutions applicable EU-wide, on issues such as opportunities for co-financing research work or definitional issues for the R&D sector. Thus, the legal aspects of doing business in Poland, in particular in the R&D sector, include proven solutions applicable in all EU countries, which significantly reduces the risk of locating investments in Poland.

Science and higher education in Poland have been completely restructured over the past twenty years. On October 1, 2010, a package of six new laws to reform the system of education in Poland came into force, including the Act on the Principles of Financing Science and the Act on the National Centre for Research and Development (NCBiR). As a result of the reform, two specialized agencies - the National Centre for Science and NCBiR - took over the responsibility for funding research and development projects in Poland. System changes were driven by macroeconomic conditions, Poland's accession to the EU (1 May 2004), and demographic trends. Since the 1990s, the number of students increased more than 5-fold, which is reflected in the level of education of Polish society. Poland ranks 17th in the world in terms of enrolment rates and boasts the second highest in the European Union the proportion of tertiary education graduates in the population of people aged 20-29 - 95% (Global Competitiveness Report 2010-2011, World Economic Forum). Over 1.9 million people are currently studying at Polish universities (Central Statistical Office and Eurostat). At the same time, the number of technical graduates is steadily growing each year.

Poland consistently strives to create knowledge and innovation based economy, which results from its strategy of building the competitiveness of the Polish economy based on innovation and human capital. The undeniable progress of Poland in this area is evidenced by

the systematic improvement in its position in the rankings of The Global Innovation Index.² In the 2011 edition, Poland ranked 43rd, which means a rise by 4 positions per year, and by 13 positions over two years. It should be emphasized that the improved position of Polish economy in innovation rankings is not only driven by the increased number of research and development centres, scientific papers published, patents received or the amount of R&D expenditure. Innovation rankings also take into account the social and cultural aspects of innovation and business environment to enable the effective commercialisation of R&D output. Thus, the increased innovativeness of Polish economy is largely a result of favourable business conditions to allow more efficient research and development in the enterprises sector.

Analysis of R&D sector in Poland

R&D sector in Poland includes, in accordance with the methodology by Frascati (18), four main institutional sectors ("Frascati Manual, Proposed Standard procedures for surveys of business research and development", OECD, 2002).

- Business sector (entities disclosing R&D expenditures in their financial statements);
- Government sector (departments, agencies and offices involved in conducting or supporting R&D);
- Academic sector (universities, technical colleges and other institutions providing access to higher education);
- Private non-profit institutions sector (foundations and other NGOs supporting the R&D activity).

Research and development in Poland are conducted primarily by universities and research entities of the Polish Academy of Sciences (PAN), research institutes and enterprises. By the end of 2009, 102 public universities, 77 PAN institutions and 130 R&D entities operated in Poland (Central Statistical Office). A total of 597 enterprises generated sales from R&D activity.

Expenditure on R&D

A characteristic feature of the Polish R&D sector is a relatively low, as compared to other European countries - in particular the EU Member States - level of R&D expenditure, which in 2009 amounted to only 0.76% of GDP (Eurostat).

Despite the still relatively moderate level of R&D expenditure, it must be noted that in terms of the growth rate of expenditure as a percentage of GDP, Poland is significantly above the EU-wide average, which indicates dynamic development of the Polish R&D sector. As much as 0.89% of GDP was spent on R&D in Poland in 2010, thus a significant increase was recorded in one year, continuing the strong trend that emerged in 2006 (Innovation therapy for the Polish economy", the newsletter of the Polish Association of Employers of the Pharmaceutical Industry, No. 38, April 2011).

The largest source of R&D funding in Poland are the state budget funds, financing more than half of all expenditure. The main area of R&D are the engineering and technical sciences,

² Ranking prepared by the global network of business schools INSEAD, based on two basic criteria: the degree of development of pro-innovative system solutions and the output of pro-innovative activity. The ranking allows for reliable comparison of highly innovative economies of different sizes and degrees of development, as it is based on a comprehensive methodology that goes beyond the standard indicators of innovation, such as R&D expenditures for instance.

for the development of which more than 40% of total resources allocated to R&D activities are spent in Poland every year (Small Statistical Yearbook 2011, Central Statistical Office)

The analyses by the Polish Academy of Sciences show that in 2009, a total of 597 businesses conducted R&D (selected on the basis of the criterion of generating sales from R&D), which incurred expenditures totaling PLN 1.6 billion. Where cooperative structures were formed for the needs of a research project, such cooperation occurred in the vast majority of cases only in the business sector. However, it must be noted that cross-sectoral cooperation, once it occurs, is characterized by a relatively high share of expenditure from outside the business sector. This shows that the cooperation with the public sphere can be highly cost-effective for the R&D enterprises and allows an assumption that in future this type of cooperation will gain in popularity.

It must be noted that these data refer only to one of the possible forms of cooperation of the business sector with other sectors in the area of R&D (i.e. the government, academic and private non-profit institutions sector), which is the joint implementation of research and development projects. However, taking into account other forms of cooperation, the actual scale of cooperation of businesses with other sectors appears to be much larger (see table below).

Table 3. Poland's position in international rankings of economic competitiveness

Group of entities with whom co-operation was initiated	The share of co-operating businesses in total number of businesses in Poland (%)
Consultants, private laboratories or private R&D institutes	10
Universities and other institutions of higher education	12
Government sector or public research institutes	1

Source: "Innovation 2010", Polish Agency for Enterprise Development, Warsaw 2010.

In terms of value, the greatest R&D expenditures are made in the automotive industry („Report on the largest investors in research and development in Poland in 2010", Institute of Economics Polish Academy of Sciences, Warsaw 2011) at the same time; most companies performing R&D activities operate in the electronics industry. Regionally, the businesses located in Mazowieckie and Slaskie prevail. The smallest number of companies active in the R&D is located in Podlaskie (North-East part of Poland).

Businesses operating in the R&D area are heavily represented among the companies listed on the Warsaw Stock Exchange (WSE). In 2009, a total of 108 companies listed on the Warsaw Stock Exchange (22%) disclosed R&D expenditures, which represented a year-on-year increase of more than 24%. This is one of the manifestations of the growing innovativeness of the Polish economy, where conducting R&D by large, mainstream companies starts to become a standard. At the same time, it must be noted that with the exception of 2008 which was a crisis year for the R&D industry, with businesses massively reducing their R&D budgets, the increase in the number of companies investing in R&D was higher than the overall increase in the number of entities listed on the WSE.

Labour market in the R&D sector

In 2009, the R&D sector employed almost 79 thousand persons (in the four institutional sectors - business, government, higher education and private non-profit institutions in total). For a few years the ratio of number of the R&D personnel to total employment in Poland remains constant, significantly lower than the corresponding ratio for the whole EU. Thus, with a relatively constant number of jobs and the steadily increasing number of technical graduates, the R&D labour market is characterized by a structural surplus supply, which is one of the key factors determining the potential for expansion of the Polish R&D sector.

In terms of salary structure, R&D departments are one of the better-paid departments in organisations. At the same time, it should be noted that, as shown by the analysis of salaries in individual R&D positions, there are significant differences between the structure of salaries in specialized research and development institutions, and salaries of R&D employees in manufacturing companies. In manufacturing companies the R&D departments are only additional organizational units, whose existence is dictated by the necessity of continuous improvement in manufacturing technology.

It must be noted that the structure of employment in the Polish R&D sector is characterized by an unusually high percentage of researchers.³ This demonstrates the great business potential of the Polish R&D sector, employing with more than 65.5 thousand professionals who create new ideas and knowledge that potentially translate into new products, manufacturing systems and processes.

The main employer in the area of R&D in Poland is the higher education sector (71.9% of all researchers). The lowest numbers of R&D employees are employed by the private non-profit institutions sector (0.02%), including foundations and other NGOs supporting the R&D activity. The business sector has a double digit market share in the R&D job market.

Sector development

One of the factors boosting growth of the R&D sector in recent years has been the inflow of foreign direct investments. The major global investors planning R&D expenditures as an essential element of their development strategy are increasingly choosing Poland as the location for their investments. They are creating complex research and development centres in our country with strong European and global links. This is not only due to favourable macroeconomic conditions for engaging in R&D activity in Poland, but due to investment incentives available, including grants and tax reliefs implemented for attracting foreign capital. In the EU financial perspective for 2007-2013, Poland was granted access to EUR 80.5 billion from the EU budget, including the EUR 67.3 billion from structural funds and EUR 13.2 billion from the European Agricultural Fund for Rural Development. Part of these funds (about EUR 6.2 billion under the Operational Programme Innovative Economy 2007-2013) have been channeled to the business sector to implement programs to support innovation in the economy, including in particular the development of research and development activity (app. EUR 140 million).⁴ Foreign investors in Poland so far created more than 280 service centres, including 77

³ This group includes research and teaching and staff in academic institutions of the Polish Academy of Sciences, research and development units, universities and other R&D units, as well as graduate students pursuing R&D.

⁴ Based on data from www.poig.gov.pl

R&D centres.⁵ A total of 12.1 thousand people are employed in R&D centres only, of which over 90% are university graduates.

Table 4. The largest shared service centres in terms of the number of employees, including the R&D centres, in Poland

Founding entity	Estimated employment
CapGemini	More than 3000
General Electric	More than 3000
IBM	2500-3000
FranceTelecom	2000-2500
Hewlett-Packard	2000-2500
Bertelsman Media	1500-2000
Nokia Siemens Networks	1500-2000
Citi Group	1500-2000
Shell	1500-2000
Accenture	1000-1500

Source: "Modern business services sector in Poland", Association of Business Service Leaders in Poland, Warsaw 2011.

Locations with the highest concentration of R&D workers include Kraków, Wrocław (more than 3 thousand persons employed), Warsaw and Trójmiasto (Gdansk Agglomeration) (more than a thousand persons employed).

Among the positive developments observable in R&D activities in the business sector, particularly noteworthy is the increasing importance of clustering and its impact on the R&D sector, primarily in terms of abolition of capital restrictions in financing research and development activities. The increased interest in clustering is undoubtedly favoured by the fact that supporting cluster structures is one of the important areas of state intervention at European, national and regional levels.

Clusters are initiatives aimed at promoting cooperation between public authorities, research institutes and business sector. According to estimates by the European Cluster Observatory⁶ there are 161 clusters in Poland classified as having significant impact on the economy (received at least one "star" in the assessment of the potential).⁷ Sectors in which the clusters are the most active in the particular regions are closely related to the local industrial tradition, for example:

- in Łódzkie, the most developed cluster is associated with the clothing and textile sector;
- in Podkarpackie, clusters associated with the aviation industry prevail, where the Valley Association operates;
- in Mazowieckie clusters related to education and knowledge creation, telecommunications, biotechnology, financial services and pharmaceutical sector prevail.

⁵ For: „Modern business services sector in Poland”, Association of Business Service Leaders in Poland, Warsaw 2011.

⁶ European online platform founded in 2007 to monitor the development of clustering in the European Union. The European Cluster Observatory is funded by the European Commission under the Europe Innova initiative and 7th Framework Programme.

⁷ Star clusters in Poland, the European Cluster Observatory, 2011.

Another important factor stimulating the development of R&D sector in Poland are the technology parks (TP), which are the most developed forms of innovation and entrepreneurship centres.⁸ These centres offer favourable conditions for businesses to support transfer and commercialization of technologies, the creation and development of innovative companies, development and commercialisation of new products. A total of 24 TP and 21 park initiatives operated in Poland in 2010. The 718 companies operating in TP provided nearly 25 thousand jobs. The vast majority of TP members are SME sector representatives (70%). On the other hand, the major employers are large enterprises and foreign companies which employ more than 75% of all employees. The list of major Polish technology parks, including the number of cooperating companies and industries they represent, is shown in the table below.

Table 5. Major technology parks (TP) in Poland

Name	Number of suppliers	Primary industries represented in technology park
Wroclaw Technology Park	79	ICT, food processing, biotechnology, medical devices and materials, pharmaceuticals
Pomeranian Science and Technology Park (Gdynia Innovation Centre)	76	Biotechnology, environmental protection, ICT, industrial design
Poznan Science and Technology Park of the Adam Mickiewicz University Foundation	53	Chemistry and chemical technology
Belchatow - Kleszczow Industry - Technology Park	32	ICT, electronics
Torun Technology Park	28	Machine tool industry, IT, wood and furniture industry, plastic processing industry
Nickel Technology Park Poznan	16	IT
Lodz Regional Park of Science and Technology	14	Innovative technologies
Gdansk Science and Technology Park	14	ICT, biotechnology, materials science
Krakow Technology Park	8	IC
Lublin Science and Technology Park	2	Biotechnology, electronics, optoelectronics, ICT

Source: "Innovation and entrepreneurship in Poland. Report 2010", PARP, Warsaw 2010.

Another important factor influencing the development of R&D sector in Poland are the Technology Incubators.⁹ Incubators support startup companies and create favourable conditions for cooperation with research centres, and for technology transfer and marketing. 382 companies that use the services of Technology Incubators employed nearly 2 thousand people in 2010, of which nearly 20% were employed in companies established by academic researchers.

⁸ Innovation and entrepreneurship in Poland. Report 2010, the Polish Agency for Enterprise Development (PARP), Warsaw 2010.

⁹ Innovation and entrepreneurship in Poland. Report 2010, PARP, Warsaw 2010.

To stimulate R&D activities in Poland also Technology Transfer Centres (TTC) have been established as non-profit organizations operating at the interface of business and science.¹⁰ Their primary role is to support small, medium sized enterprises (SMEs), allowing the research centres to combine commercialisation with teaching and research. TTCs mainly include academic centres, of there are 21 in Poland. Nearly 700 persons, mostly owners, managers and employees of SMEs benefited from TTC services in 2010. Characteristics of technology parks and incubators and technology transfer centres is shown in the table below.

2. Support for investment activities in R&D area

One of the factors favouring the investment attractiveness of Poland in the area of R&D is availability of investment incentives. In this chapter, potential sources of aid designed to support R&D activities have been identified. Due to the subject matter of the report, as well as a large number of support instruments available whose comprehensive presentation goes far beyond the scope of this study, the report characterizes only selected, most important source of aid in the area of R&D available for the companies.

EU Funds

Domestic aid

In order to encourage companies to implement investments in Poland, including investment in the creation /expansion of R&D centres, the national budget provides funds to support projects of considerable importance for the economy. Businesses are given an opportunity of obtaining aid for large capital expenditure investments to create a significant number of new jobs and for investments focusing on innovation in new products, processes, technology.

Research and development, as one of the priority areas for economic development, is supported on preferential terms, as it involves a high degree of engagement of qualified staff and a high degree of sophistication of the tasks and processes. An important source of support from national funds for the creation /expansion of R&D centres is "Programme to support investments of high importance to the economy for 2011-2020" adopted by the Council of Ministers in 2011.

Special Economic Zones

Special Economic Zones (SEZ) are administratively separate parts of Polish territory, where investors may conduct business activity on preferential terms, after obtaining appropriate permits. SEZs were created primarily to accelerate the economic development of regions threatened by unemployment, create new jobs, boost the competitiveness of Polish economy and attract foreign investors to Poland.

A total of 14 Special Economic Zones are currently operating in Poland. One of the areas supported within the SEZ is the creation /expansion of R&D centres. Businesses that are planning this type of investment may locate them within the SEZ or apply for inclusion of private land on which the investment will be located into the SEZ .

3. Conducting R&D

¹⁰ Ibidem.

Support of R&D – EU Funds

Conducting R&D, aimed at acquiring new knowledge, developing new products, services, processes, technology, and significant improvements to existing solutions is an important area for the development of economy as it contributes to the growth of its innovativeness. Currently, R&D works in Poland are predominately a domain of academic and research institutes. Businesses also increasingly engage in R&D, seeing it as an opportunity of getting competitive edge over their competitors. To support businesses in engaging in R&D activity alone or in cooperation with the scientific community, EU funds for 2007-2013 are available for R&D works. It should be noted that the R&D work should strive to achieve results which may have a chance of being implemented in business activity.

An important instrument to support the businesses in this regard is Measure 1.4 Innovative Economy Operational Programme „Support for goal-oriented projects”.

Support of R&D – domestic aid

In order to encourage entrepreneurs to undertake R&D activity, individually or in consortium with academic sector, national funding has been provided in support of such projects. The initiator of such support was the Ministry of Science and Higher Education. Currently, the main administrator of the national resources allocated to support R&D is the National Centre for Research and Development. An important instrument to support entrepreneurs in the R&D is InnoTech Programme for 2011-2013. This programme is a continuation of previous already completed editions, i.e. the Technology Initiative Programme (launched in 2008) and IniTech Programme (launched in 2009). The current edition of the InfoTech programme is focused on direct support of businesses that are planning to carry out the works independently or in cooperation with the scientific community.

4. Other sources of support for R&D

Innovative Economy Operational Programme, Measure 1.3. Support for R&D projects for entrepreneurs carried out by scientific entities

The European funds for the development of innovativeness of Polish economy in the current financial perspective have largely been exhausted. Currently, negotiations are underway at the interministerial level on the use of reserve funds available. Recognizing the need to promote cooperation in R&D area between science and business, part of the remaining funds is considered to be allocated to the additional call for proposals under Measure 1.3 IE OP. Support for R&D projects for entrepreneurs carried out by scientific entities. The call for proposals should be opened in the first quarter of 2012 and would be addressed only to scientific and industrial consortia. Until recently, the companies were not able to benefit from public aid for implementation of joint R&D projects with scientific entities within this financial instrument. Allowing the businesses to participate in the amount of grants received by the scientific and industrial consortium to carry out joint research project (i.e., enabling the businesses to benefit from public aid under measure 1.3 IE OP) is an effect of systemic reforms which are aimed at intensifying cooperation between science and business. The final decision to launch an additional call for proposals for scientific and industrial consortia were be made by the end of 2011.

Regional Operational Programmes

The importance of R&D activity carried out by businesses for the economic development has also been observed at the regional level, which is reflected in the principles for distribution of EU funds under the Regional Operational Programmes for 2007-2013. In each of the regions, instruments designed to support the businesses in this area are planned. In addition to features which are common for all regions (e.g., supporting R&D infrastructure), these instruments also specify certain requirements and rules of support which specific for the particular regions.¹¹

Some regions have focused on supporting small and medium-sized enterprises (such as the two measures in Małopolskie (2.2.A Research projects and 2.2.B Investment projects of enterprises in the field of R&D), and in Lubelskie Measure 1.6 Research and new technologies in strategic activities for the region and the Slaskie ROP Measure 1.2.3 Innovations in micro, small and medium-sized enterprises), others have also provided support to large enterprises to conduct R&D (for example in Mazowieckie Measure 1.2 Building a science-business cooperation network, Wielkopolskie in Measure 1.4 Scheme II R&D infrastructure, and Podlaskie in Measure 1.1 Creating conditions for development of innovation). In two of the ROPs

A requirement was imposed on the businesses to carry out activities for at least 12 months (e.g. in the Kujawsko-Pomorskie in Measure 5.4 Strengthening of the regional potential for research and technology development, in Podkarpackie in Measure 1.3 Regional Innovation System). Not all regions, however, provided in their programmes for measures directly dedicated to R&D activity. In the Regional Operational Programmes of regions: Zachodniopomorskie and Swietokrzyskie, support for research and development may only be granted to businesses when the research and development are included into the structure of a project which is qualified as typical investment activity. The degree of utilization of funding varies by each region. In some regions the calls for proposals to exhaust all allocated funds have already been held, in the others calls for applications are still being planned. Summary of availability of funds in each region is presented in the table below (as of September 23, 2011).

Table 6. Funds for R&D at enterprises - Regional Operational Programmes

Region	Availability of funds Entity			
	2011	2012- 2013	SME	large
dolnoslaskie	-	+	+	+
kujawsko pomorskie	+	-	+	+
lubelskie	-	+	+	-
lubuskie	-	-	+	-
łódzkie	-	+	+	+
małopolskie	+	+	+	-

¹¹ For example in Pomorskie under the research and development Measure 1.2 Innovations in SME, support may also be earmarked for the implementation and commercialization of product and technology platforms, while in Mazowieckie under Measure 1.2 Construction of science-economy cooperation network, there is a possibility of co-financing, alongside R & D, also the implementation of the results of such works.

mazowieckie	-	+	+	+
opolskie	-	+	+	-
podkarpackie	+	+	+	+
podlaskie	-	+	+	+
pomorskie	+	-	+	-
slaskie	-	+	+	-
swietokrzyskie	-	-	-	-
warmińskomazurskie	-	-	+	-
wielkopolskie	+	-	+	+
zachodniopomorskie	-	-	-	-

Source: Own research based on information from regional institutions implementing the operational programs.

7th Framework Programme

Enterprises that plan to conduct research projects can also benefit from the support provided under the EU 7th Framework Programme, implemented in 2007-2013. This program mainly aims to support transnational co-operation in research and development, boost the European research, and support the broad application of results and dissemination of knowledge generated as a result of research activities.

The requirements for applying for support in particular areas of research (e.g. energy, transport, information technology) are provided in specific programmes, and in calls for proposals. Basically, for the majority of specific programmes, the minimum requirement is that at least 3 independent entities from three different Member States or associated countries must be involved with the project. It should be noted that the European Commission is currently developing a programme to replace the 7th Framework Programme. Horizon 2020 is proposed to have a budget of approximately EUR 80 billion to support research projects in the financial perspective 2014-2020. The expected date of entry into force of the new programme is 1 January 2014.

Research and Development Centre Status

Enterprises that acquire the status of a Research and Development Centre under the conditions specified in the Act of 30 May 2008 on certain forms of support for innovation activities (Journal of Laws No 116, Item 730, with amendments), may benefit from a number of incentives provided for such centres:

- the amount transferred to the innovation fund of up to 20 % of income earned in the given month is deductible against the tax base;
- exemption from property, agriculture and forestry tax (up to EUR 200 thousand over 3 consecutive years). The R&D Centre status can be granted to enterprises engaged in research and development. To be granted RDC status the enterprises must generate at least EUR 1.2 million in net sales of goods, products and financial operations for the preceding fiscal year.

Technology incentive

In Poland, businesses may also benefit from a technology incentive which allows them to claim up to 50% of costs of acquisition of new technology against CIT tax base. Support may be granted for investments in new technologies, i.e. the technological know-how in the form of research and development results, to allow the businesses to produce new products or services.

Summary

Innovation, directly related to the activities of businesses in the R&D area, is one of the key determinants of the development of economies and strengthening their competitive edge in the global market. The importance of R&D activity is even more important in times of turmoil in global financial markets and devaluation of the traditional patterns of economic development (such as heavy industry, economy based on raw materials) towards building a knowledge-based economy, based on human capital, sustainable use of resources, low-carbon technologies. Poland is a country in which global trends are immediately noticeable and affect the shape of homeland economic policy.

The market for research and development services in Poland has been rapidly growing for a few years now. Its growth is stimulated in both directions – top-down by the authorities of the state, including investment incentives, and bottom-up by the academic and business communities. Poland, being one of the architects and participants of the new, long-term strategy for socio-economic development of the European Union, titled Strategy “Europe 2020”, actively stimulates the knowledge and innovation based development at the national level. This is directly reflected in the steady growth of expenditure on R&D and the in-depth reform of the system of education. System changes, implemented gradually over the last few years, seek to close the gap between science and business, which is essential for the commercialization of knowledge and innovation generated. Examples of system actions designed to stimulate collaboration between science and business include the preferential treatment, in allocation of public funds, of collaborative projects that guarantee the effective commercialisation of R&D output.

Complementary to the actions of the government, the academic and business communities launch their own cooperation initiatives. For several years the market for R&D services in Poland has seen rapid growth in the number of innovation and entrepreneurship centres, such as technology parks, technology transfer centres and technology incubators. On the one hand, these structures enable highly efficient transfer of knowledge and innovation between science and business, and also abolish capital restrictions for financing research and development activities. Against this background, the development of clustering in Poland is particularly noteworthy, as due to specific nature of cluster structures – sensitive to the quality of relations between partners and availability of financial resources – the cluster system directly reflects the evolution of R&D services sector towards strong cooperation between science and business. It is assumed that in the next financial perspective for 2014-2020 collaboration between academic and business sectors, particularly in the form of clusters, will be an important area of support from public funds.

The EC legislative work on the spending of European funds in the new financial perspective 2014-2020 is aimed at creating a stronger link between the cohesion policy and the Strategy “Europe 2020”. The strategy provides for improvement of conditions for research and development activity, including allocation of 3% of EU GDP for R&D investments, and increased emphasis on the measurable market outcomes of the financed projects. It should be noted that the above strategic objectives applicable at EU level match the trends observable in the Polish market for research and development services. These mainly include: the progressive commercialisation of the R&D services sector and the dynamic growth of R&D expenditure in relation to GDP. Also, the national strategic documents show that, in the future, the

development of R&D sector is to remain one of the key areas of public administration intervention at central and regional levels. The draft Strategy for Innovativeness and Effectiveness of Economy published in February 2011, determining the medium and long term areas of public intervention, names as one of the priorities the support for the growth of R&D sector and transfer of knowledge, which also includes fostering cooperation in the innovation system and creating an environment conducive to the creation, use and protection of knowledge. Bearing in mind the potential of the Polish R&D services sector, as well as prospects for the development of this area at EU level, we can say that Poland is and will remain in the future an attractive location for investments in research and development.

References

- Bačlawski K., Koczerga M., Zabierowski P. "Studium przedsiębiorczości w Polsce. Raport GEM Polska" (Entrepreneurship in Poland. Report GEM Poland), Educational Foundation Bachalski, Poznań 2005
- Central Statistical Office, Science and Technology in Poland in 2009
- Dzierżanowski M., Szultka S., Tamowicz P., Wojnicka E. "Analiza stanu i kierunku rozwoju parków naukowo-technologicznych, inkubatorów technologicznych i centrów transferu technologii w Polsce" (Analysis of state and direction of development of scientific and technological parks, technological incubators and technology transfer centres in Poland), PAED, Warsaw 2005
- Economy Innovation and Efficiency Strategy (SIEG), Ministry of Economy, Warsaw 2011
- "European Trend Chart on Innovation. Annual Innovation Policy Trends and Appraisal Report: Poland", European Commission 2006
- "Frascati Manual, Proposed Standard procedures for surveys of business research and development", OECD, 2002.
- Gajewski M., Szczucki J. "Rozwój usług realizowanych przez ośrodki Krajowego Systemu Usług dla Małych i Średnich Przedsiębiorstw" (Development of services offered by National SME Service Network), Pentor-PAG Uniconsult, Warsaw 2006
- Global Competitiveness Report 2011, World Economic Forum
- Guliński J., Zasiadły K. (red.) "Innowacyjna przedsiębiorczość akademicka - światowe doświadczenia" (Innovative entrepreneurship in universities - world experiences), PAED, Warszawa 2005
- "Innovation 2010", Polish Agency for Enterprise Development, Warsaw 2010.
- "Innovation and entrepreneurship in Poland. Report 2010", PARP, Warsaw 2010.
- "Kierunki zwiększania innowacyjności gospodarki na lata 2007-2013" (Increasing innovations in economy for the years 2007 - 2013), Ministry of Economy, Warsaw 2006
- "Modern business services sector in Poland", Association of Business Service Leaders, Warsaw 2011
- "Narodowe Strategiczne Ramy Odniesienia 2007-2013 wspierające wzrost gospodarczy i zatrudnienia. Narodowa Strategia Spójności" (National Strategic Reference Framework 2007-2013 to support economic growth and employment. National Cohesion Strategy), Ministry of Regional Development, Warsaw 2006
- „National Compensation Study,” Sedlak & Sedlak, 2010.
- "Ośrodki innowacji w Polsce" (Innovation Centres in Poland), PAED, SOOliP, Poznań-Warsaw 2005
- "Policy Mix for Innovation in Poland - Key Issues and Policy Recommendations", OECD Working Party on Innovation and Technology Policy, Warsaw 2007.
- "Raport o stanie sektora małych i średnich przedsiębiorstw w Polsce w latach 2004-2005" (Report on SMEs in Poland in 2004-2005), PAED, Warsaw 2006

- “Regionalny Program Operacyjny Województwa Łódzkiego na lata 2007-2013” (Regional Operational Program for the Province of Lodz, 2007-2013), Marshall Office, Lodz 2006
- “Report on the largest investors in research and development in Poland in 2010”, Institute of Economics Polish Academy of Sciences.
- Stawasz E., Głodek P., Stos D., Wojtas J. “Raport z badania potrzeb innowacyjnych przedsiębiorstw z sektora MSP w województwie łódzkim” (Report on analysis of needs of innovation SME companies in the Province of Lodz) , Lodz 2005, copied printout
- “Strategia rozwoju klastra w Łodzi na lata 2007 - 2015” (Cluster development strategy 2007 - 2013), Resolution Nr IX/155/07 of the Lodz City Council of 11 April 2007
- “Strategia Rozwoju Kraju 2007-2015” (National Development Strategy 2007 - 20015), Ministry of Regional Development, Warsaw 2006
- “Systemy wspierania innowacji i transferu technologii w krajach Unii Europejskiej i w Polsce” (Support systems of innovation and technology transfer in the EU countries and in Poland), PAED, Warsaw 2003
- Ustawa o niektórych formach wspierania działalności innowacyjnej z 29 lipca 2005 roku, (Act on certain forms of supporting innovation of 29 July 2005), OJ 2005, No. 179, item 148
- Woźnicki J. (red.) “Regulacje prawne, dobre wzorce i praktyki dotyczące korzystania przez podmioty gospodarcze z wyników prac badawczych i innych osiągnięć intelektualnych instytucji akademickich i naukowych”, Institute of a Knowledge Society, National Chamber of Commerce, Warsaw 2006
- “W stronę systemu zarządzania innowacyjnością w Polsce” (Towards innovation management in Poland), Ecorys Maastricht Research Institute, 2004
- “Założenia polityki innowacyjnej państwa do 2002 roku (Assumptions of state innovation policy till 2002) , Committee of Scientific Research, Warsaw 1999
- “Założenia polityki naukowej, naukowo - technicznej i innowacyjnej państwa” (Assumptions of scientific, scientific and technical and innovation policy), Ministry of Science and IT, Warsaw 2004
- “Założenia programu wzrostu konkurencyjności gospodarki w latach 2007-2013”, Ministry of Economy, Warsaw 2004
- Żołnierski A. (ed.) “Innowacyjność 2006. Stan innowacyjności, metody wspierania, programy badawcze. Raport” (Innovation 2006. Present state, support methods, research programs. Report), PAED, Warsaw 2006
- Zuromski P. “Anticipating Future - Regional Innovation Strategy for the Lodz Region LORIS”, European Commission website
ec.europa.eu/regional_policy/conferences/od2006/doc/presentations/b/zuromski_10b07.doc
- Zuromski P. “Małe i średnie przedsiębiorstwa w Polsce. Instrumenty wspierania konkurencyjności” (SMEs in Poland. Instruments which support competitiveness), ŁARR S.A., Lodz 2006

www.poig.gov.pl