

# R&D SECTOR IN POLAND



## The R&D sector in Poland – characteristics and possibilities of support

### Characteristics of the Polish economy

The high business potential and strong economic growth factors, such as the receptive internal market, macroeconomic stability, high competitiveness, have been recognized by the foreign investors who locate their production facilities, research and development centres or shared service centres in Poland. According to a recent survey by UNCTAD, the FDI inflow to Poland grew year-on-year by 71% in 2011, while the global FDI index went up by 16% only.

The high influx of FDIs has been largely complemented by the domestic investments whose value increased by more than 8% in 2011<sup>1</sup>, being one of the main drivers of economic growth in the past year. The increased investment activity strengthens the process of modernization of the Polish economy. According to IMF data, technological intensity of exports has increased significantly in the past decade – with the share of medium-high-tech and high-tech products going up from app. 40% in 2000 to 50% in 2010<sup>2</sup>, driven by the growing role of research and development in Poland.

A strong, competitive economy and the increased level of technological sophistication of industry are one of the most important factors indicative of the attractiveness of Poland as a location for R&D investments. An important benefit for prospective investors is the ability to achieve significant synergies in the key Polish industry and services sectors.

The other factors confirming the attractiveness of Poland for investors include: access to highly qualified employees, wages and improved institutional and legal environment.

### R&D sector in figures

#### Expenditure on R&D in Poland

Poland has achieved an impressive growth rate of investments in research and development. In the period 2002–2010, the cumulative increase was 122.5%, and the average growth rate was 10.5%<sup>3</sup> y/y, while the corresponding figures for the EU are 27.4% and 3.1%, respectively. The high growth rate is a characteristic feature of the emerging economies of the region, whereby levels of R&D investment in Poland are still relatively low. Average expenditure on R&D in the EU 27 in 2010 amounted to 2% of GDP, while in Poland this ratio was 0.74%.

#### Development of R&D sector

According to this year's edition of the report *Modern Business Services Sector in Poland, 2012*<sup>4</sup>, as of December 2011, out of more than 337 services centres operating in Poland, 93 were research and development centres. In the last year's edition of the report (as at April 30, 2011)<sup>5</sup>, a total of 77 R&D centres were identified, which indicates a dynamic growth and significant potential of the Polish market for research and development.

In particular, in the context of R&D activity, the following industries are growing: automotive, aviation, electronic, telecommunications, IT, biotechnology and biochemical, medical and pharmaceutical engineering, construction, as well as robotics and nanotechnology.

Activity of large R&D centres has a positive impact on the development of regions in which they are located. Many companies are working with local academic centres and other scientific institutions. They create strategic alliances between business and science. Cooperation between large investors and research centres often takes the form of clusters, technology parks, centres for Technology Transfer (CTT), etc. Also local businesses, including small and medium-sized enterprises, benefit from this collaboration as suppliers of services, sub-assemblies and high-tech components. The local suppliers also tend to undertake research & development more frequently.

#### Qualified employees

In 2010, the R&D sector employed nearly 100 thousand employees (in all business and government sectors, higher education and private institutions jointly), which is app. 20 thousand more than in the previous year<sup>6</sup>. The number of persons employed in the R&D sector fluctuates at around 0.5% of total employment, significantly below the average EU level. Stable level of jobs in the R&D sector, with the growing number of students and graduates of technical specialities, means that there is an oversupply of qualified employees. Access to qualified personnel is an important factor driving the high, compared to other countries in

<sup>1</sup> IMF estimates, Source: *Republic of Poland 2012 Article IV Consultation*.

<sup>2</sup> WITS database (World Bank), OECD, IMF estimates.

<sup>3</sup> Source: Eurostat.

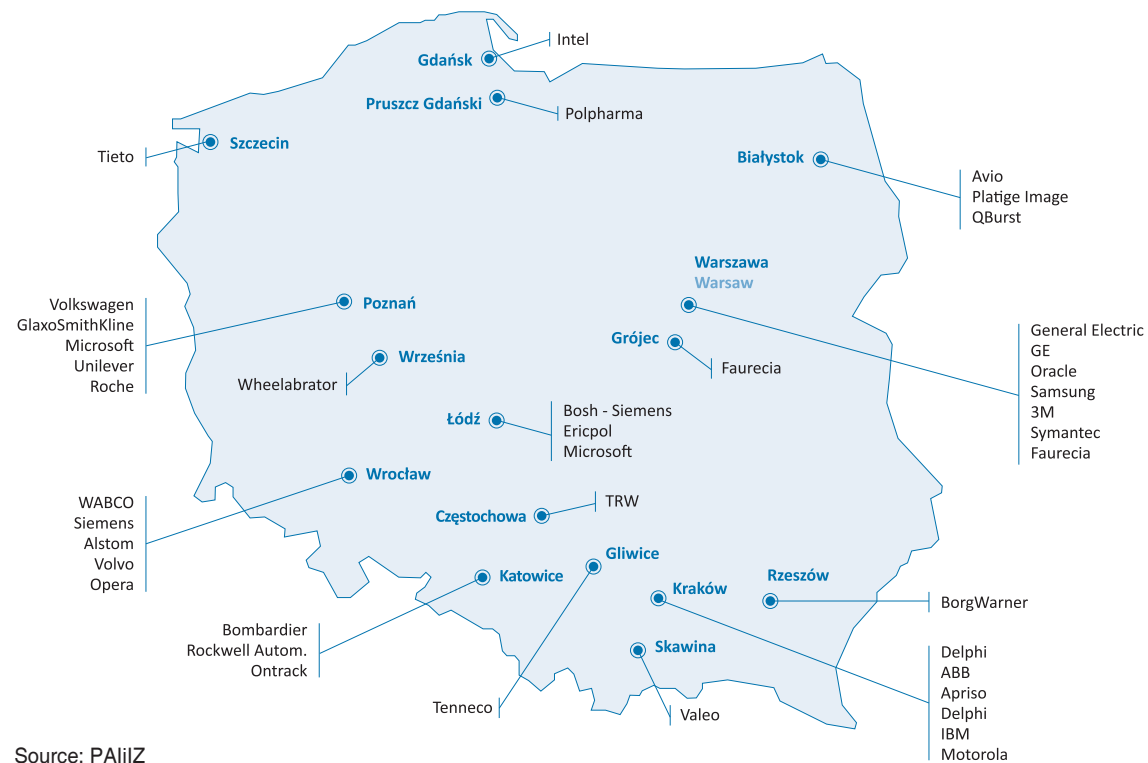
<sup>4</sup> Association of Business Service Leaders (ABSL), *Modern Business Services Sector in Poland, 2012*.

<sup>5</sup> Association of Business Service Leaders (ABSL), *Modern Business Services Sector in Poland, 2011*.

<sup>6</sup> Source: "Science and Technology in Poland in 2010" Report, Central Statistical Office.

the region, potential of R&D sector in Poland. The largest academic centre in Poland is Warsaw, with the largest university – the University of Warsaw – providing education to 54.3 thousand students. Other major academic centres include Kraków, Wrocław and Poznań.

### Selected R&D centres



Source: PAIilZ

Number of business environment centres in Poland has been rapidly growing since 1990. Currently, a total of 54 technology parks operate in Poland (with 12 in the process of launching operations and 14 at the stage of preparatory and adaptation work), 69 technology transfer centres and 182 technology clusters and cluster initiatives.

### Available forms of support for R&D

One of the factors favouring the attractiveness of Poland for investors in the area of R&D is the availability of investment incentives supporting implementation of innovative projects, including projects related to creation of R&D centres.

#### New initiatives for innovative sectors

Out of new initiatives targeted at selected sectors, the biggest budget – amounting to PLN 1 billion – is planned for the BLUE GAS (Polish Shale Gas) programme, secondly for support of the medical sector within the StrategMed (PLN 800 million). Large budget can be expected by projects related to the aviation industry, co-financed from the InnoLot programme (PLN 500 million for years 2013–2017). Another PLN 400 million is provided to support environmental projects (the GEKON), for which it will be possible to apply from March 2013. Under the BRIDGE project: Research Development Innovation there is PLN 240 million available, whereas under the InnoMed – PLN 195 million. Most of these programmes are pilot ones and the first application rounds will start soon.

#### National funds for R&D of large and small ones

By the end of the third quarter of 2012, 1,027 contracts were signed for financing projects related to growth of research and development under the Innovative Economy Operational Programme (IE OP) and 893 contracts for financing projects implementing innovative solutions. The total value of signed contracts for realization of projects in the area of R&D under IE OP amounts to over PLN 26 billion<sup>7</sup>, which almost exhausted the budget.

However, regardless of the EU funds, the availability of which is currently limited, entrepreneurs still have the opportunity to apply for available national resources. It is mainly possible to apply for support of capital expenditure related to the establishment of an R&D centre. Two sources of national aid are devoted to this aim: the government “Programme for supporting investments of major importance for the Polish economy for 2011–2020” with a total budget of PLN 727 million, as well as support within the Special Economic Zones.

<sup>7</sup> [http://www.funduszeuropejskie.gov.pl/AnalizyRaportyPodsumowania/Strony/KSI\\_raporty.aspx](http://www.funduszeuropejskie.gov.pl/AnalizyRaportyPodsumowania/Strony/KSI_raporty.aspx)

Moreover, in order to encourage enterprises to undertake R&D alone or in cooperation with science sector, national funds have been provided to support conduct of R&D works. The main administrator of these funds is the National Centre for Research and Development (NCBR), which offers a number of diverse possibilities of co-financing of R&D. An example is the INNOTECH, which consists of two separate components – In-Tech and Hi-Tech or the Applied Research Programme, the budget of which for years 2012–2017 is set at PLN 1.2 billion.

It should also be remembered that there is also technology incentive available, allowing to deduce from the corporate tax base expenses related to the acquisition of new technology. Tax incentives are also available to businesses which have acquired the status of a Research and Development Centre.

### Bonus for business-science cooperation

Much of the support instruments for R&D is aimed at strengthening cooperation between science and business sectors, in order to ensure transfer of knowledge and experience between science and business. This approach enables the use of solutions developed by science sector directly in companies' industrial activity. In the case of some instruments, there is a possibility of applying for funding alone. However it should be noted that sometimes even in the case of such instruments, starting cooperation with science sector is extra rewarded and increases the chances of getting support.

### The new perspective 2014–2020

Works on the future shape of the EU's financial perspective 2014–2020 are currently underway. The works include among others preparation of the successor of the Innovative Economy Operational Programme (working title: the Smart Growth Operational Programme). It is highly probable that the support under the programme will be aimed at:

- supporting research, technological development and innovation
- enhancing the competitiveness of SMEs
- supporting transition to a low carbon economy in all sectors

It should also be noted that the European Commission is currently working on a programme to replace the 7th Framework Programme. Horizon 2020 is to have a budget of app. EUR 80 billion to support research projects in the financial perspective 2014–2020. The new programme is expected to come into force on 1 January 2014.

### Good practice

There are more and more research and development centres in Poland, including those operating within international capital groups and companies interested in the development of innovation. Below are presented selected enterprises which in their activity in Poland put emphasis on development based on R&D works. Among the enumerated companies there are also such, whose projects have been financed from the European Funds.



**ABB Corporate Research Centre** has opened in January 1997. The Research Centre is working for the needs of ABB companies around the world, focusing on the traditional areas including power networks and systems, automation, industrial diagnostics, manufacturing process management and on areas currently developed such as information technology and systems, electronics and power electronics and new material technologies.

Employees of ABB Corporate Research Centre are working together with leading universities in Poland, including Academy of Mining and Metallurgy in Krakow, Jagiellonian University, Wrocław University of Technology, Warsaw University of Technology, Poznań University of Technology and Technical University of Silesia.

ABB Corporate Research Centre is engaged in global initiatives in the field of numerical simulations (Simulation Support Team), power electronics and development of group norms and standards (Standard Group Office). In addition, a part of the Centre has been spun off to form ABB Information Systems Centre in Krakow in charge of IT systems and applications in ABB Group.



**Asseco Poland S.A.** is the largest IT company listed on the Warsaw Stock Exchange. The company's operations are based on knowledge, innovative technologies and vast experience, supported by the results in the development and implementation of specialized software and IT solutions for the most vital sectors of the economy. As part of its operations, Asseco is carrying out several research and development projects that receive support from the Structural Funds and from stage budget funds earmarked for education. In addition, the Company is involved in execution of R&D projects carried out in cooperation with scientific research centres of universities and other organizations that support the development of Polish science. Through the joint projects Asseco actively participates in the transfer of knowledge and experience between the IT industry and the science and higher education sector.



Asseco Poland S.A. implements the following projects supported from public funds:

**“Creation of IT competence centres in locations: Warsaw, Krakow and Katowice”** – carried out within Sub-measure 4.5.2 IE OP

**Total value of the project:** PLN 127,003,873.60

**Value of support received:** PLN 36,320,938.08

**Number of new jobs:** about 600 (to end 2012)

The aim of the project was to set up and equip the IT Centre with the necessary staff and infrastructure which helped increase the company’s potential in terms of the number and complexity of research projects relating to software development, deployment and commercialisation of new technologies in areas that in the government assumptions for the science and innovation policies have been identified as being of major importance for the economy. In addition, the project aims to launch the following products and services:

- Support System for Commercial Health Insurance Schemes;
- Regional Medical Solutions;
- Comprehensive software package for health care institutions – iMED;
- Commercial IT platform for private farming and agricultural advisory – Agro Biuro;
- Billing system for utility companies;
- Design and development of IT systems for Frontex.

**“Development and implementation of banking products and services sales support system for franchise broker networks and banking sales agent networks”** – implemented within the project run by the Ministry of Science and Higher Education „Technology Initiative I”

**Total value of the project:** PLN 1,534,382.00

**Value of support received:** PLN 465,234.00

The project was implemented together with the Technical University of Rzeszów with the aim to develop and implement a prototype Sales Agent System. The Sales Agent System is a concept of a comprehensive web-based workflow application for the handling of credit applications of individual bank customers and other financial market institutions. Through integration with the Main Bank System, the system will form a direct sales support module.



**General Electric Company Poland** is conducting its research and development activities through the Engineering Design Centre (EDC), created in 2000 under an agreement between General Electric Aircraft Engines and the Polish Aviation Institute.

During first 10 years of its operation, the number of EDS employees rose from 20 in 2000 to 900 in 2010. New job openings will be created for employees working on new solutions in the field of aviation, energy and oil industry aimed at mitigating the negative environmental impact of products used in these sectors.

In 2008, General Electric Company Polska received a grant of nearly PLN 10 million within the Sub-measure 4.5.2 IE OP for the expansion and development of the R&D Center EDC that is developing new technologies designed to reduce emissions and optimise combustion.

**Krzysztof Połomski, Site Operations Manager, GE Aviation, General Electric Company Polska Sp. z o.o.:**

*“General Electric is one of the world’s leading suppliers of modern technologies that applied in practical solutions had been increasing the standard of living of the inhabitants of our planet for decades. One of the few centres in the world where such works are carried out is GE Company Poland, Engineering Design Center, an engineering organization specializing in modern environmentally advanced rotating machines and complex industrial and power systems. The structural funds have allowed the company to increase the level of employment planned for 2007–2010 by an additional 180 engineering graduates, of which 95% had Polish technical university degrees. Subsidised jobs in teams responsible for developing new technologies to reduce emissions and optimise combustion allowed to assign to EDC GECP projects that so far had only been carried out in specialized dedicated R&D centres of the Corporation.”*

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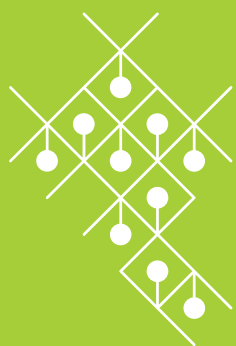
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