



EUROPEAN / Research &
COMMISSION / Innovation

Innovation Union Competitiveness report 2011

Country profile – Poland



COUNTRY PROFILE



PL - Poland

Progress to meet the Europe 2020 R&D intensity target

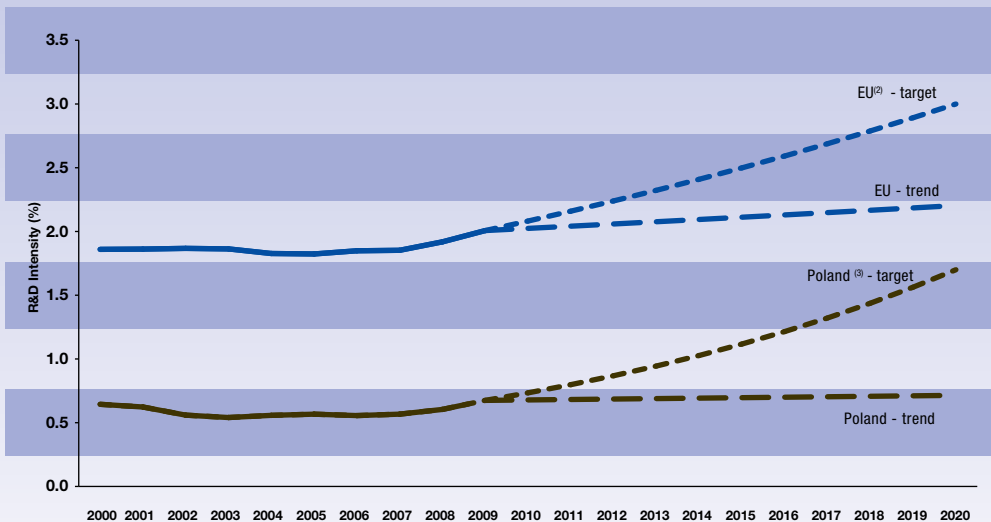
In the last decade, R&D intensity in Poland has stayed below 0.7%, passing from 0.64% in 2000 to 0.68% in 2009. As a result, despite a small increase over the last decade, Poland scores one of the lowest R&D intensities in the European Union. In order to maintain and increase its economic competitiveness and secure high-quality jobs, in addition to keep improving factors such as primary and secondary education, production

facilities or infrastructures, Poland will have to sharply increase its investments in Research and Innovation.

Polish authorities have recognised this challenge and have set an ambitious, albeit realistic¹ national R&D target for 2020: R&D intensity in Poland should account for 1.7% of the national GDP in 2020. This net increase of around 1.1% would be similar to the one needed for the EU to reach the 3% R&D target.

POLAND

R&D Intensity projections, 2000-2020⁽¹⁾



Source: DG Research and Innovation

Data: DG Research and Innovation, Eurostat

Notes: (1) The R&D Intensity projections based on trends are derived from the average annual growth in R&D Intensity 2000-2009.

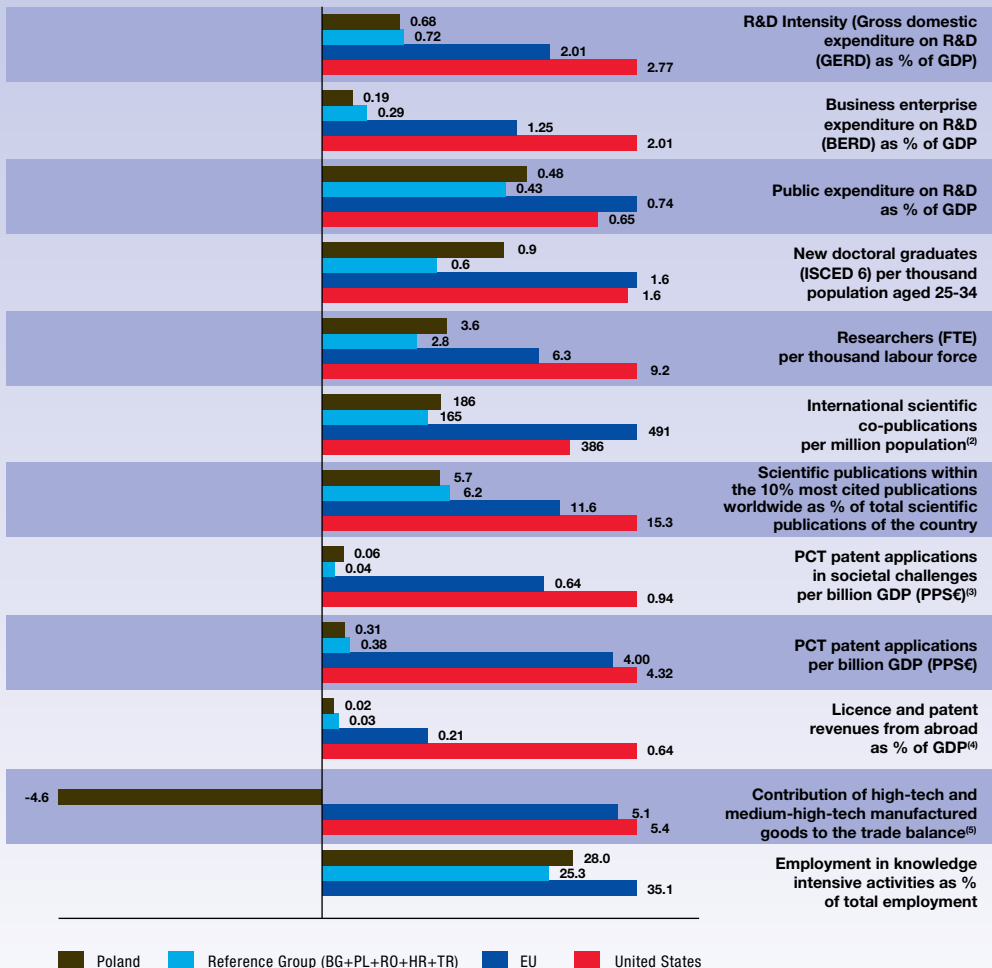
(2) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.

(3) PL: This projection is based on a tentative R&D Intensity target of 1.7% for 2020.

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¹ Based on the current economic structure of Poland and the existing R&D intensity gap in most sectors of the economy vis-à-vis more developed countries, Poland could significantly increase its R&D intensity in order to start a scientific and technological convergence process.

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R&D profile, 2009⁽¹⁾

Source: DG Research and Innovation
Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) The values refer to 2009 or to the latest available year.

(2) (i) HR and TR are not included in the Reference Group; (ii) The EU value refers to the median rather than to the average.

(3) HR is not included in the Reference Group.

(4) EU refers to extra-EU.

(5) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU; (iii) Data are not available for the Reference Group.

(6) Elements of estimation were involved in the compilation of the data.

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Research and Innovation Performance

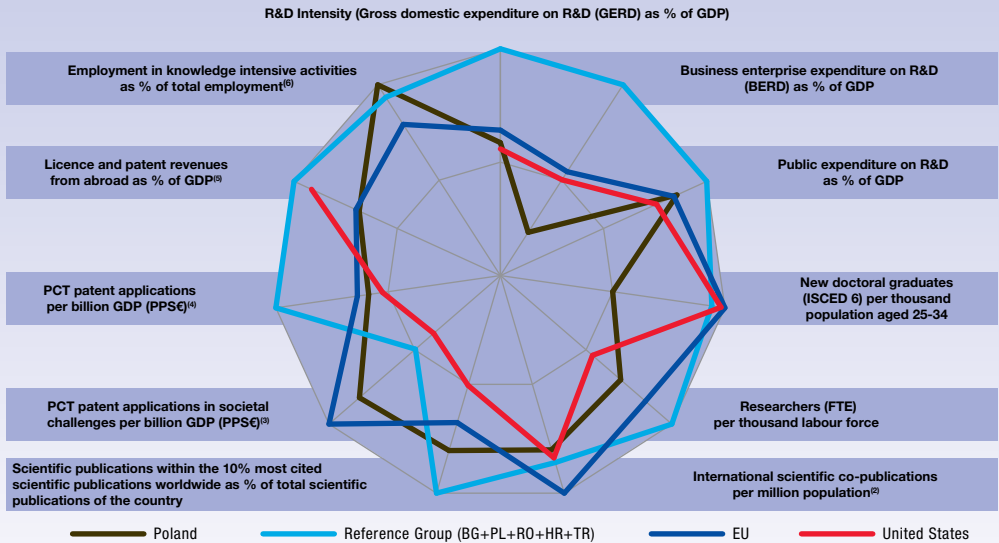
The Polish research and innovation system is characterised by its need to reform in order to enhance both its scientific and technological capacity and facilitate the uptake of new ideas by the business sector. At present, the low level of R&D expenditure, especially by the private sector, coupled with insufficiently favourable framework conditions, reflects in a poor scientific and technological performance. Poland scores low both in terms of high-impact scientific publications and patent applications, where the gap with the EU average is particularly large. Inevitably, the

low levels of scientific and technological investment and performance also have consequences on the transition of Poland towards a knowledge based economy. Employment in knowledge intensive activities is one of the lowest in the EU as so is the international competitiveness of the high-technology and medium-high technology sectors, despite the overall relative importance of the manufacturing sector in the economy.

In dynamic terms, in general Poland has been progressing but at a lower pace than the average for those countries that count on a similar scientific

POLAND

Average annual growth (%), 2000-2009⁽¹⁾



Source: DG Research and Innovation

Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)

Notes: (1) Growth rates which do not refer to 2000-2009 refer to growth between the earliest available year and the latest available year over the period 2000-2010.

(2) (i) HR and TR are not included in the Reference Group; (ii) EU refers to the median rather than to the average.

(3) HR is not included in the Reference Group; Average annual growth refers to real growth.

(4) Average annual growth refers to real growth.

(5) EU refers to extra-EU.

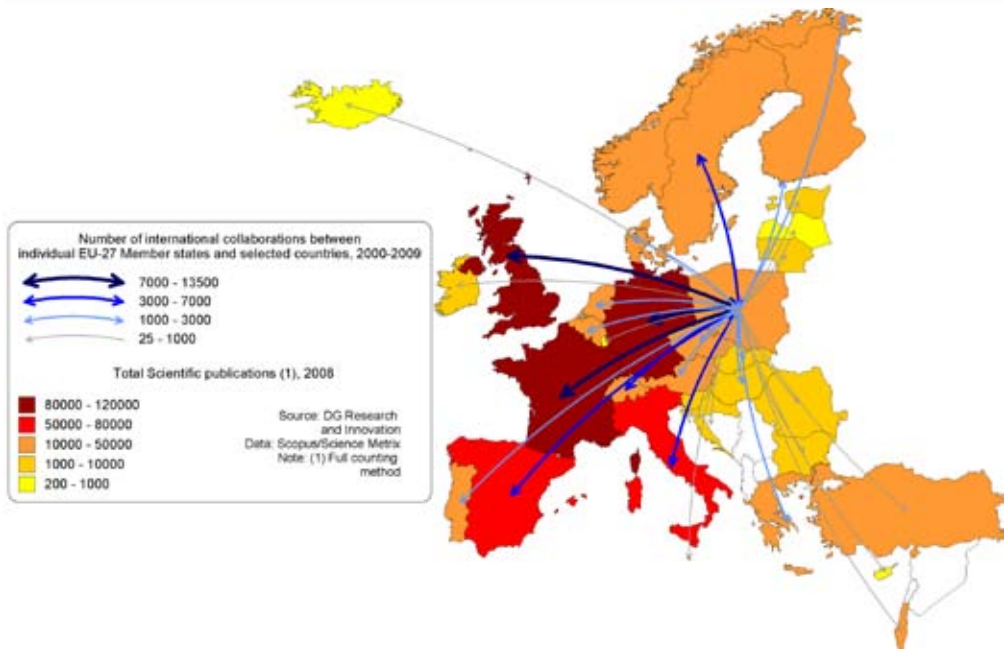
(6) TR is not included in the Reference Group.

(7) Elements of estimation were involved in the compilation of the data.

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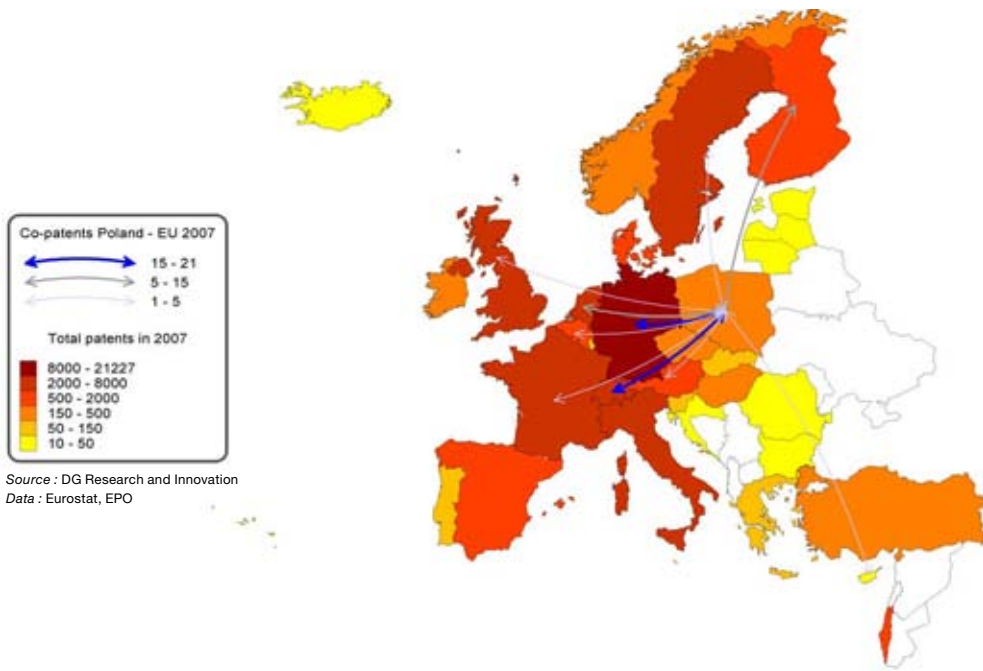
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Co-publications between Poland and European Countries in 2000-2009



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Co-invented patent applications between Poland and European Countries, 2007



and technological profile. If this trend continued, it could have important consequences for the future international economic competitiveness of Poland and its scientific and technological convergence with the rest of the EU.

Participation in the European Research Area : Scientific and Technological collaborations

As indicated in the table above, Poland is one of the European countries with the lowest rates of overall co-publications per million population. This suggests that the country is not actively participating and benefiting from the international scientific knowledge flows favoured by the construction of the European Research Area. In terms of scientific partners, the closest linkages are created with Germany, mainly due to its overall scientific and technological leadership in Europe and the geographical proximity between the two countries.

In terms of co-patenting, Poland scores overall very low levels of co-patenting activity. As for co-publications, Germany is the biggest partner of Polish technological actors. Switzerland is the second largest technological

partner while the connections with all the other countries are relatively low.

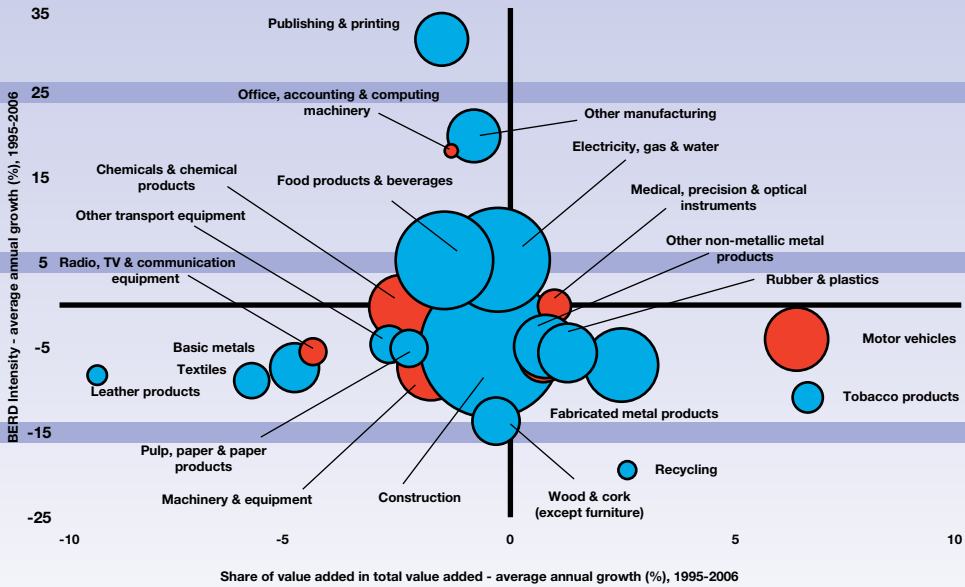
Structural change towards more research-intensive economy

The fall of private R&D intensity in Poland in the last decade is mainly due to a stagnation of the relative research intensity in high technology sectors and the shift of the economic structure towards less research intensive activities, with the exception of the motor vehicle sector, which has gained relative importance in the total Polish production in the last decade.

Three of the most research intensive sectors, i.e. the machinery and equipment sector, the radio, TV and communication equipment sector, and the motor vehicle sector, have suffered from a drop in their relative R&D investments over the value of their production. This finding suggests that there has not been a move towards more research intensive, higher value added products in these industries. The relative stable sectoral composition of Polish industry around low research intensive sectors reflects the comparative weaknesses in terms of research and innovation performance.

POLAND

Share of value added versus BERD intensity - Average annual growth, 1995-2006



Source: DG Research and Innovation

Data: OECD

Notes: (1) High-Tech and Medium-High-Tech sectors are shown in red. 'Other transport equipment' includes High-Tech, Medium-High-Tech and Medium-Low-Tech.

(2) 'Wearing apparel and fur' is not included on the graph.

(3) 'Coke, refined petroleum, nuclear fuel' and 'Electrical machinery and apparatus' are not visible on the graph.

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FP7 Key facts and figures

Applications

As of 2011/03/16, a total of

- 5248 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 6741 applicants from Poland (2.53% of EU-27*) and
- requesting EUR 1 643.72m of EC contribution (1.86% of EU-27*)

Among the EU-27* Poland (PL) ranks:

- 11th in terms of number of applicants and
- 13th in terms of requested EC contribution

Success rates

- The PL applicant success rate of 19.2% is lower than the EU-27* applicant success rate of 21.6%.
- The PL EC financial contribution success rate of 13.7% is lower than the EU-27* rate of 20.7%.

Specifically, following evaluation and selection, a total of

- 1 010 proposals were retained for funding (19.2%)
- involving 1 297 (19.2%) successful applicants from Poland and
- requesting EUR 225.15m (13.7%) of EC financial contribution

Among the EU-27*, Poland (PL) ranks:

- 19th in terms of applicants success rate and
- 18th in terms of EC financial contribution success rate

Signed grant agreements

As of 2011/03/16, Poland (PL) participates in

- 867 signed grant agreements
- involving 11 615 participants of which 1 078 (9.28%) are from Poland
- benefiting from a total of EUR 3 056.88m of EC financial contribution of which EUR 201.18m (6.58%) is dedicated to participants from Poland.

Among the EU-27* in all FP7 signed grant agreements, Poland (PL) ranks:

- 13th in number of participations and
- 15th in budget share

SME performance and participation

- The PL SME applicant success rate of 17.98% is lower than the EU-27* SME applicant success rate of 19.33%.
- The PL SME EC financial contribution success rate of 15.30% is lower than the corresponding EU-27* rate of 18.26%.

Specifically,

- 1 819 PL SME applicants requesting EUR 350.12m
- 327 (17.98%) successful SMEs requesting EUR 53.57m (15.30%)

In signed grant agreements, as of 2011/03/16,

- 168 PL SME grant holders, i.e., 15.58% of total PL participation
- EUR 29.02m, i.e., 14.42% of total PL budget share

Top 3 collaborative links with

- DE - Germany (1 462)
- UK - United Kingdom (1 141)
- IT - Italy (1 012)

**Nr. of Researchers as% of population N/A 0.40%
 Rank in EU-27*
 Innovation scoreboard (2008) - 23th
 - Below EU-27 average
 - Moderate Innovator

Nr. of FP7 applicants (% EU-27*)	6 741	
(2.53%)	266 507	
Req. EC contribution by FP7 applicants in EUR million	1 643.72	
(% EU-27*)	88 295	
(1.86%)		
Nr. of successful FP7 applicants (% EU-27*)	1 297	
(2.19%)	59 199	
Req. EC contribution by successful FP7 applicants in EUR million	225.15	
(% EU-27*)	18 262.02	
(1.23%)		
Success rate FP7 applicants	19.2%	21.6%
Success rate FP7 EC contribution	13.7%	20.7%
Nr. of FP7 grant holders (% EU-27*)	1 078	
(2.10%)	51 279	
EC contribution to FP7 grant holders in EUR million	201.18	
(% EU-27*)	16 578.15	
(1.21%)		
Nr. of FP7 coordinators (% of grant holders)	114	
(10.58%)	9 383	
(18.30%)		
Nr. of FP7 SME grant holders (% of grant holders)	168	
(15.58%)	8 845	
(17.25%)		
EC contribution to FP7 SME grant holders in EUR million	29.02	
(% of grant holders)	2 207.73	
(14.42%)		
(13.32%)		

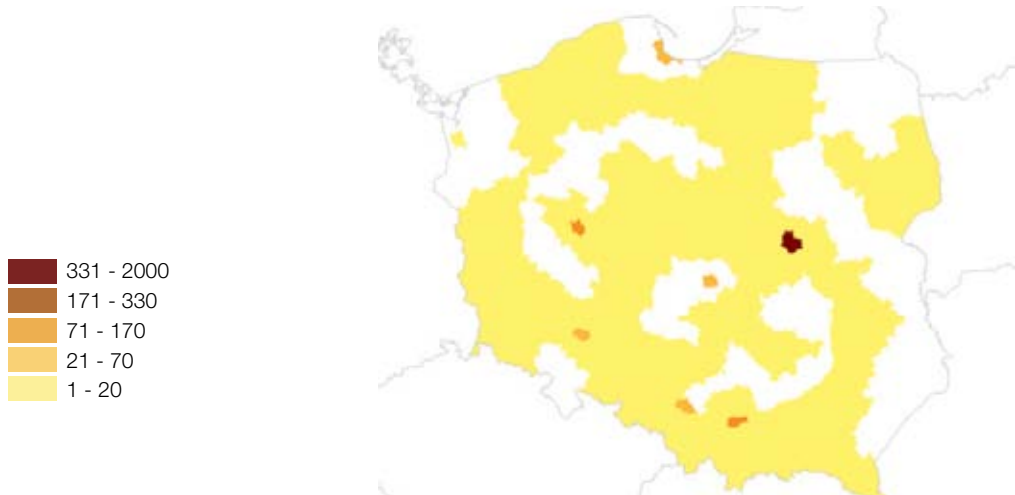


TABLE 1

**PL - Poland - Most active FP7 research priority areas
by number of applicants applying for the research projects**

FP7 priority area	Nr. of applicants	Requested EC contribution by applicants (M euro)	Nr. of mainlisted applicants	Success Rate (applicants)	Requested EC contribution by mainlisted applicants (M euro)	Success Rate (requested EC contribution)
Information and Communication Technologies	1 145	306.99	151	13.19%	34.80	11.33%
Marie-Curie Actions	776	n/a	210	27.06%	n/a	n/a
Research for the benefit of SMEs	766	91.58	125	16.32%	14.30	15.61%
Transport (including Aeronautics)	609	122.32	144	23.65%	24.13	19.73%
Socio-economic sciences and Humanities	518	84.58	41	7.92%	4.76	5.62%
Health	473	128.07	76	16.07%	16.32	12.74%

TABLE 2

**PL - Poland - Most active FP7 research priority areas
by EC contribution granted to the research projects**

FP7 priority area	Number of grant holders	% of all PL grant holders	EC contribution (EUR million)	% of total EC contribution to PL
Information and Communication Technologies	148	13.73%	29.97	14.90%
Marie-Curie Actions	155	14.38%	19.26	9.57%
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	85	7.88%	17.64	8.77%
Research Infrastructures	89	8.26%	17.58	8.74%
Research Potential	11	1.02%	15.78	7.84%
Health	81	7.51%	15.30	7.61%

Notes : Report generated on: 2011/03/28.10:47 AM

FP7 proposal and application figures are valid as of 2011/03/16

FP7 grant agreements and participation figures are valid as of 2011/03/16

*EU-27 includes the 27 country-members and JRC as a separate entity

**E-STAT Reference year: 2007

**European Innovation Scoreboard is available at the website of DG Enterprise and Industry

TABLE 3

**PL - Poland - Participation in the FP7 research projects
by organisation activity type**

Activity Type	Nr. of applicants	Requested EC contribution by applicants (M euro)	Nr. of mainlisted applicants	Success rate (applicants)	Requested EC contribution by mainlisted applicants (M euro)	Success rate (requested contribution)	Nr. of grant holders	EC contribution to grant holders	% of total EC contribution to grant holders
HES	2.736	589,72	478	17,47%	73,61	12,48%	410	78,25	38,89%
PRC	1.615	308,48	308	19,07%	53,99	17,50%	270	45,43	22,58%
REC	1.295	305,45	316	24,40%	55,24	18,08%	314	65,05	32,34%
OTH	518	107,96	101	19,50%	14,03	13,00%	6	1,04	0,52%
PUB	349	67,23	86	24,64%	16,93	25,18%	78	11,41	5,67%
SME	1.819	350,12	327	17,98%	53,57	15,30%	168	29,02	14,42%

HES - Higher or secondary education, PRC - Private for profit (excl. education), REC - Research organisations, OTH - Others, PUB - Public body (excl. research and education)

TABLE 4

**PL - Poland - The most active NUTS3 regions,
by EC contribution granted to the FP7 research projects**

PL - Poland region	Number of grant holders	% of all PL - Poland grant holders	EC contribution (M euro)	% of total EC contribution to PL
Miasto Warszawa (PL127)	445	41.28%	79.57	39.55%
Miasto Krakow (PL213)	125	11.60%	25.05	12.45%
Miasto Poznan (PL415)	109	10.11%	22.85	11.36%
Miasto Wroclaw (PL514)	69	6.40%	11.31	5.62%
Trojmiejski (PL633)	63	5.84%	11.29	5.61%

TABLE 5

**PL - Poland - Most active organisations in terms
of EC contribution granted to the FP7 research projects**

Legal Name	Number of Participations	% of all PL grant holders	EC contribution (M euro)	% of total EC contribution to PL grant holders
Uniwersytet Warszawski (Uniwersaw)	52	4.82%	13.72	6.82%
Akademia Gorniczo-Hutnicza Im. Stanislawia Staszica W Krakowie (AGH / AGH-UST)	28	2.60%	10.56	5.25%
Instytut Chemii Bioorganicznej Pan	24	2.23%	10.01	4.98%
Politechnika Warszawska (WUT)	40	3.71%	9.17	4.56%
Instytut Biologii Doswiadczalnej Im. M. Nenckiego Polskiej Akademii Nauk (IBD PAN)	12	1.11%	4.75	2.36%