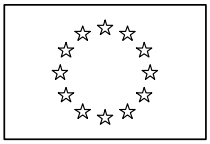


EUROPEAN COMMISSION

Brussels, 8.6.2011
SEC(2011) 739 final

Part 36/41

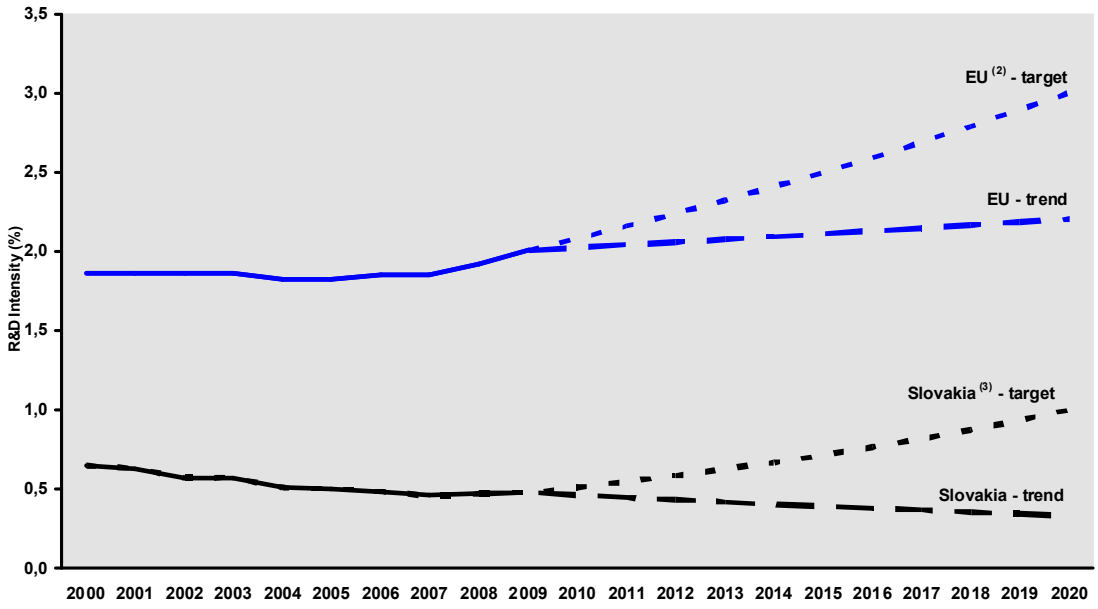
COMMISSION STAFF WORKING PAPER

Innovation Union Competitiveness report 2011

Progress towards meeting the Europe 2020 R&D intensity target

Since the early 1990s, the Slovak Republic has undertaken a radical transformation of its economic and social structures that also affected its research and innovation system. The rise of a dual economy comprising branches of multinational companies with high productivity level and some 60 000 SMEs and few large domestic companies has favoured a system dominated by technology imports and a sharp fall in traditional in-house R&D. As a result, R&D intensity has steadily declined from a peak of 3.88% in 1989 to 0.48% in 2009. This sharp fall shows a scientific and technological dependency which may jeopardise the long-term growth perspectives of the Slovak economy, particularly once efficiency gains through capital investment are exhausted. In order to correct this situation, the Slovak Republic has set an R&D intensity target of 1% for 2020 which would reverse the last 20-year negative trend.

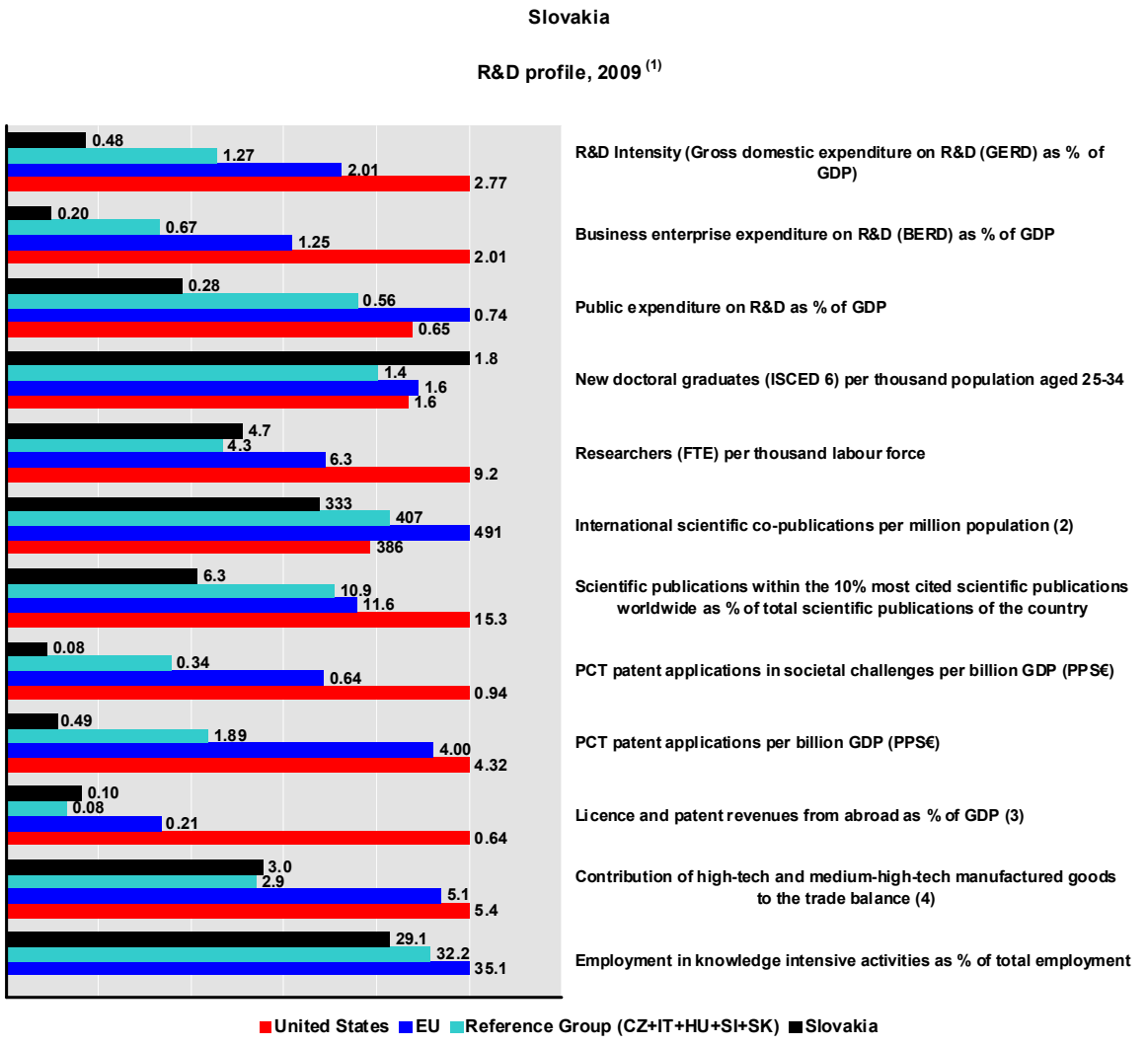
Slovakia - R&D Intensity projections, 2000-2020 (1)



Source: DG Research and Innovation — Innovation Union Competitiveness Report 2011
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) SK: This projection is based on a tentative R&D Intensity target of 1.0% for 2020.

Research and innovation performance

The Slovak research and innovation system is characterised by the sharp effects of the economic and social transformations that took place in the 1990s and early 2000s and that radically downsized the system due to falling public and private R&D investments and the associated brain drain of scientists from the public sector. At present, the very low R&D investment, both in the public and private sectors, results in poor scientific and technological production that reinforces the international dependency of the system and hinders its ability to create, use and diffuse knowledge. As a consequence, the transition to a knowledge-based economy may be at stake, as evidenced by the relatively low percentage of people employed in knowledge-intensive activities.



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) The EU value refers to the median rather than to the average.
(3) EU refers to extra-EU.
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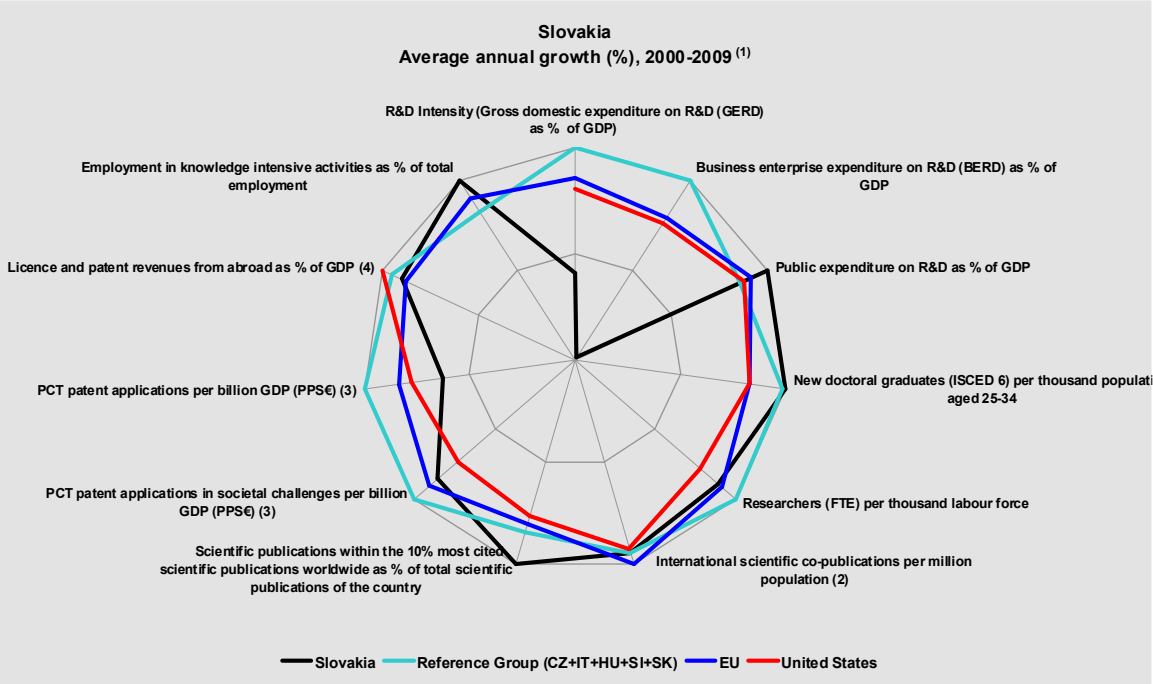
(5) Elements of estimation were involved in the compilation of the data.

Innovation Union Competitiveness Report 2011

In dynamic terms, the most striking feature is the sharp fall in private R&D investments, in comparison with other countries that may be closer technological and economic competitors,

such as the Czech Republic or, to a lesser extent, Slovenia and Hungary. In the longer run, a sustained underinvestment in R&D may endanger not only the scientific and technological convergence with the EU average, but also Slovakia's long-term competitiveness. There are positive signs, such as dynamic improvement of public expenditure on R&D, scientific quality and new doctoral graduates.



Source: DG Research and Innovation
Innovation Union Competitiveness Report 2011
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) The EU value refers to the median rather than to the average.
(3) Average annual growth refers to real growth.
(4) EU refers to extra-EU.
(5) Elements of estimation were involved in the compilation of the data.

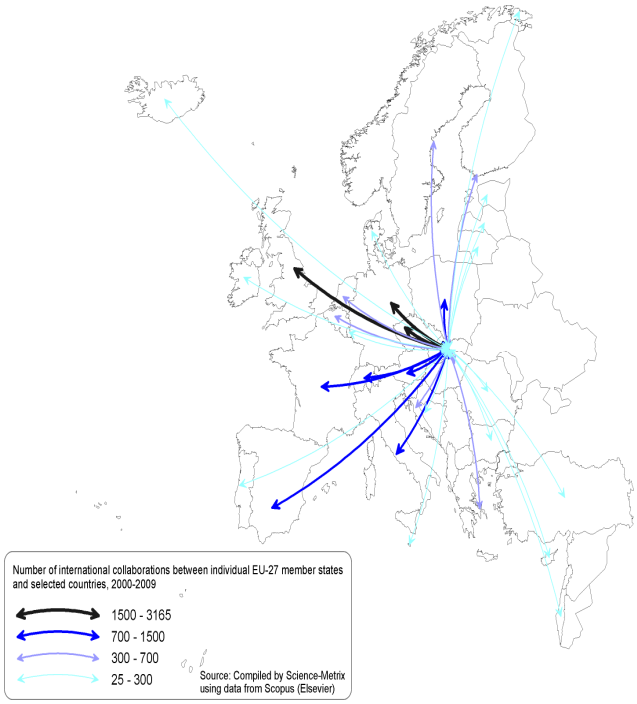
Participation in the European Research Area: scientific and technological collaborations

As indicated in the table above, Slovakia is one of the countries with the lowest rate of overall scientific co-publications per million population. This suggests that the country is not actively

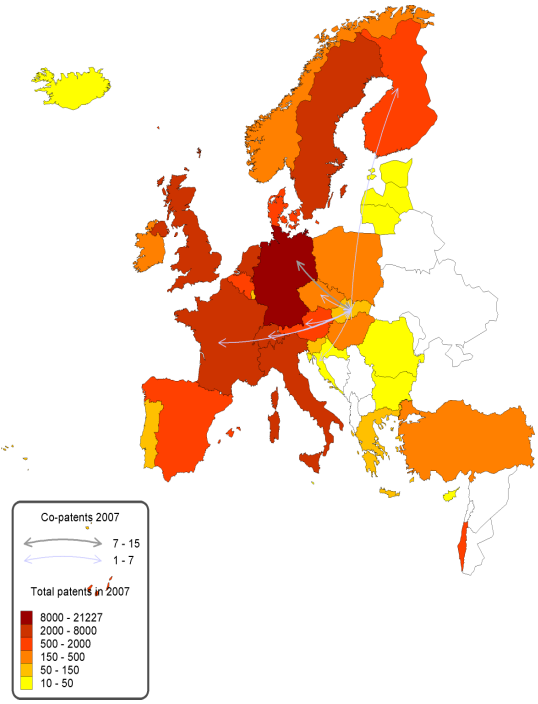
participating in and benefiting from the international scientific knowledge flows favoured by the construction of the European Research Area. As it could be expected due to the geographical and historical ties, the Czech Republic is one of its main scientific partners.

In terms of co-patenting, the Slovak Republic has a low activity level, but with cooperation also with Germany, France, Switzerland and Finland.

Co-publications between Slovakia and European countries in 2000-2009



Co-invented patent applications between Slovakia and European countries, 2007



Source: DG Research
Data: Scopus/ Science Metrix and Eurostat

FP7 Key facts and figures

Applications:
As of 2011/03/16, a total of

- 1.177 eligible proposals were submitted in response to

**Nr. of Researchers as % of population	0,36%	0,40%
Rank in EU-27* Innovation scoreboard		

248 FP7 calls for proposals

- involving 1.479 applicants from Slovakia (0,55% of EU-27*) and
- requesting EUR 301,74m of EC contribution (0,34% of EU-27*)

Among the EU-27* Slovakia (SK) ranks:
- 21st in terms of number of applicants and
- 22nd in terms of requested EC contribution

Success rates:

- The SK applicant success rate of 19,9% is lower than the EU-27* applicant success rate of 21,6%.
- The SK EC financial contribution success rate of 12,8% is lower than the EU-27* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 230 proposals were retained for funding (19,5%)
- involving 295 (19,9%) successful applicants from Slovakia and
- requesting EUR 38,77m (12,8%) of EC financial contribution

Among the EU-27*, Slovakia (SK) ranks:
- 17th in terms of applicants success rate and
- 20th in terms of EC financial contribution success rate

Signed grant agreements
As of 2011/03/16, Slovakia (SK) participates in

- 205 signed grant agreements
- involving 3.155 participants of which 260 (8,24%) are from Slovakia
- benefiting from a total of EUR 797,01m of EC financial contribution of which EUR 33,24m (4,17%) is dedicated to participants from Slovakia.

Among the EU-27* in all FP7 signed grant agreements, Slovakia (SK) ranks:
- 22nd in number of participations and
- 24th in budget share

SME performance and participation

- The SK SME applicant success rate of 18,26% is lower than the EU-27* SME applicant success rate of 19,33%.
- The SK SME EC financial contribution success rate of 13,46% is lower than the corresponding EU-27* rate of 18,26%.

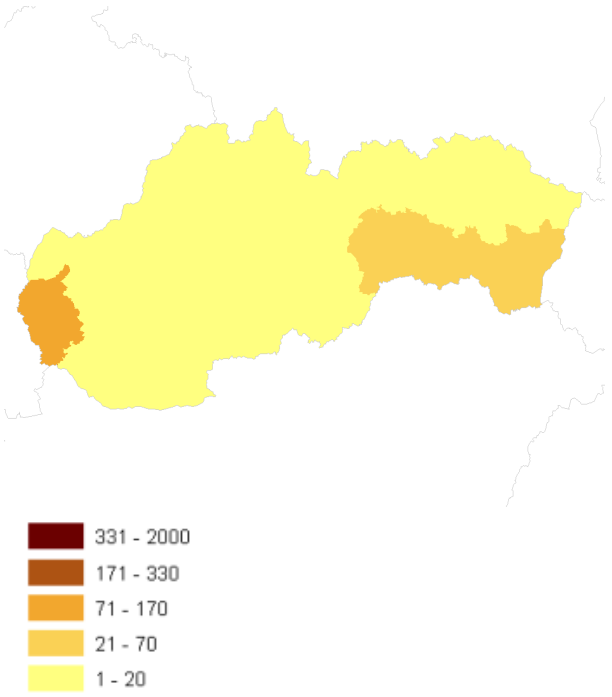
Specifically,

- 493 SK SME applicants requesting EUR 116,68m
- 90 (18,26%) successful SMEs requesting EUR 15,71m (13,46%)

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

- 49 SK SME grant holders, i.e., 18,85% of total SK

(2008)	- 21st	
- Below EU-27 average		
- Moderate Innovator		
Nr. of FP7 applicants		
(% EU-27*)	1.479	
(0,55%)	266.507	
Req. EC contribution		
by FP7 applicants		
in EUR million		
(% EU-27*)	301,74	
(0,34%)	88.295	
Nr. of successful FP7 applicants		
(% EU-27*)	295	
(0,50%)	59.199	
Req. EC contribution		
by successful FP7 applicants		
in EUR million		
(% EU-27*)	38,77	
(0,21%)	18.262,02	
Success rate FP7 applicants	19,9%	21,6%
Success rate		
FP7 EC contribution	12,8%	20,7%
Nr. of FP7 grant holders		
(% EU-27*)	260	
(0,51%)	51.279	
EC contribution		
to FP7 grant holders		
in EUR million		
(% EU-27*)	33,24	
(0,20%)	16.578,15	
Nr. of FP7 coordinators		
(% of grant holders)	20	
(7,69%)	9.383	
(18,30%)		
Nr. of FP7 SME grant holders		
(% grant holders)	49	
(18,85%)	8.845	
(17,25%)		
EC contribution to FP7 SME		
grant holders in EUR million		
(% of grant holders)	9,68	
(29,12%)	2.207,73	
(13,32%)		



participation

- EUR 9,68m, i.e., 29,12% of total SK budget share

Top 3 collaborative links with:

- DE - Germany (336)
- UK - United Kingdom (273)
- IT - Italy (228)

SK - Slovakia - 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	219	71,42	36	16,44 %	8,15	11,41 %
Research for the benefit of SMEs	141	17,62	22	15,60 %	2,82	16,02 %
Marie-Curie Actions	140	n/a	36	25,71 %	n/a	n/a
Socio-economic sciences and Humanities	128	17,87	11	8,59 %	1,64	9,19 %
Environment (including Climate Change)	120	23,82	15	12,50 %	1,97	8,25 %
Health	101	23,79	14	13,86 %	2,70	11,35 %

SK - Slovakia - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all SK grant holders	EC contribution (EUR million)	% of total EC contribution to SK
Information and Communication Technologies	33	12,69%	5,96	17,92 %
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	19	7,31%	3,51	10,57 %
Security	8	3,08%	3,41	10,27 %
Marie-Curie Actions	32	12,31%	3,30	9,92 %
Health	13	5,00%	2,23	6,71 %
Research for the benefit of SMEs	18	6,92%	2,20	6,61 %

SK - Slovakia - 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	% ot total EC contribution to grant holders
HES	574	96,22	102	17,77%	11,04	11,47%	82	9,49	28,57%
PRC	352	86,97	73	20,74%	14,14	16,26%	76	11,76	35,38%
REC	277	50,53	59	21,30%	8,50	16,83%	63	9,43	28,38%
OTH	144	30,34	28	19,44%	2,18	7,19%	10	0,29	0,88%
PUB	102	13,39	32	31,37%	2,82	21,04%	29	2,26	6,80%
SME	493	116,68	90	18,26%	15,71	13,46%	49	9,68	29,12%

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

SK - Slovakia - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
SK - Slovakia region	Number of grant holders	% of all SK - Slovakia grant holders	EC contribution (M euro)	% of total EC contribution to SK
Bratislavsky kraj (SK010)	137	52,69%	18,43	55,44%
Kosicky kraj (SK042)	39	15,00%	6,00	18,05%

Zilinsky kraj (SK031)	21	8,08%	1,79	5,39%
Trnavsky kraj (SK021)	17	6,54%	1,69	5,08%
Banskobystricky kraj (SK032)	10	3,85%	0,75	2,24%

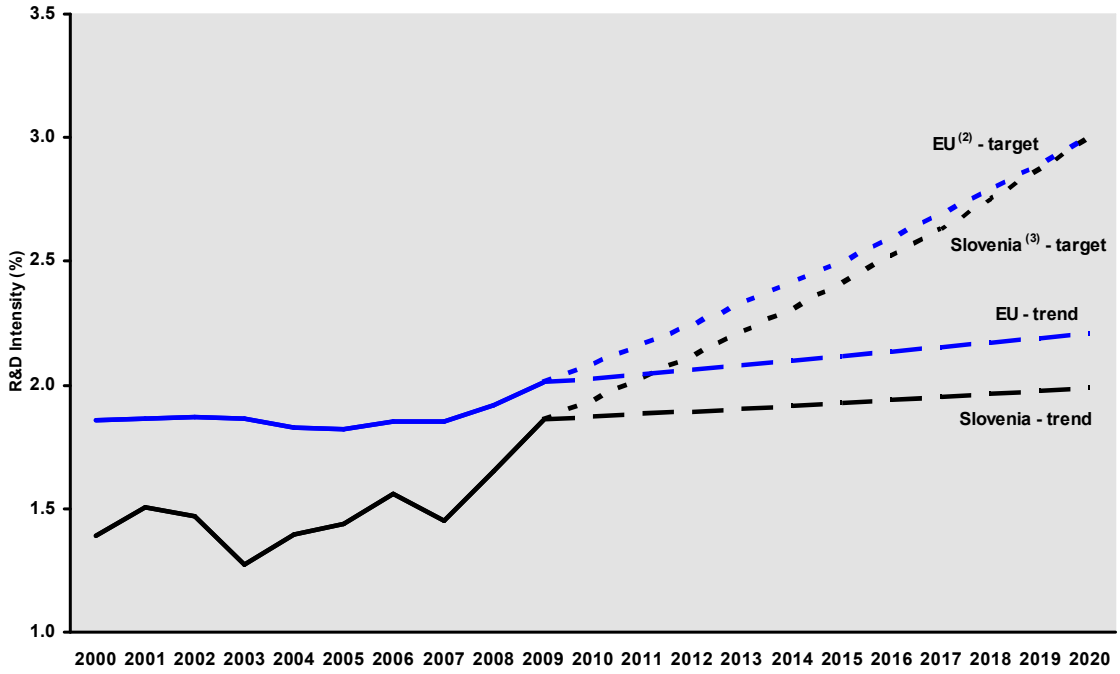
SK - Slovakia - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	**Number of Participations**	**% of all SK grant holders**	**EC contribution (M euro)**	**% of total EC contribution to SK grant holders**
TECHNICAL UNIVERSITY KOSICE (TUK)	11	4,23%	2,29	6,90%
Ardaco, a.s. (ADO)	5	1,92%	2,23	6,70%
UNIVERZITA KOMENSKEHO V BRATISLAVE (UNIVERZITA KOMENSKEH)	15	5,77%	1,99	5,99%
USTAV INFORMATIKY, SLOVENSKA AKADEMIA VIED (UI SAV)	5	1,92%	1,76	5,29%
VIROLOGICKY USTAV SLOVENSKEJ AKADEMIE VIED	5	1,92%	1,54	4,64%

NOTES:
Report generated on: 2011/03/28,10:50 AM
FP7 proposal and application figures are valid as of the 2011/03/16
FP7 grant agreements and participation figures are valida as of the 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

Progress towards meeting the Europe 2020 R&D intensity target

R&D intensity in Slovenia has fluctuated over the last decade. More precisely, it decreased from 1.50% in 2001 to 1.27% in 2003, increased to 1.56% in 2006 and slightly decreased to 1.45% in 2007, before increasing to 1.86% in 2009. These fluctuations are mirrored by fluctuations in the R&D intensity of both private and public sector over the same period, with exception of the decrease in 2007, which is attributed mainly to the large increase in GDP. In 2009 the business enterprise expenditure on R&D as a % of GDP was 1.2% and the public sector expenditure was 0.66%, these values being above those in countries with a similar industrial structure and knowledge capacity. In nominal terms in 2009, Business expenditure and government funding on R&D has increased in Slovenia, which proves that Slovenia regards R&D as a priority for ensuring a better and more economic growth in the longer term. Given the trend scenario presented below, Slovenia would still be slightly below the EU average in 2020, at an R&D intensity level of 1.99%. In this context Slovenia has set an ambitious, albeit realistic R&D intensity target of 3% of GDP for 2020.

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



Source: DG Research and Innovation Innovation Union Competitiveness report 2011
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 for 2000-2009 in the the case of the EU and for 2000-2007 in the case of Slovenia.
(2) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.
(3) SI: This projection is based on a tentative R&D Intensity target of 3.0% for 2020.
(4) SI: There is a break in series between 2008 and the previous years.

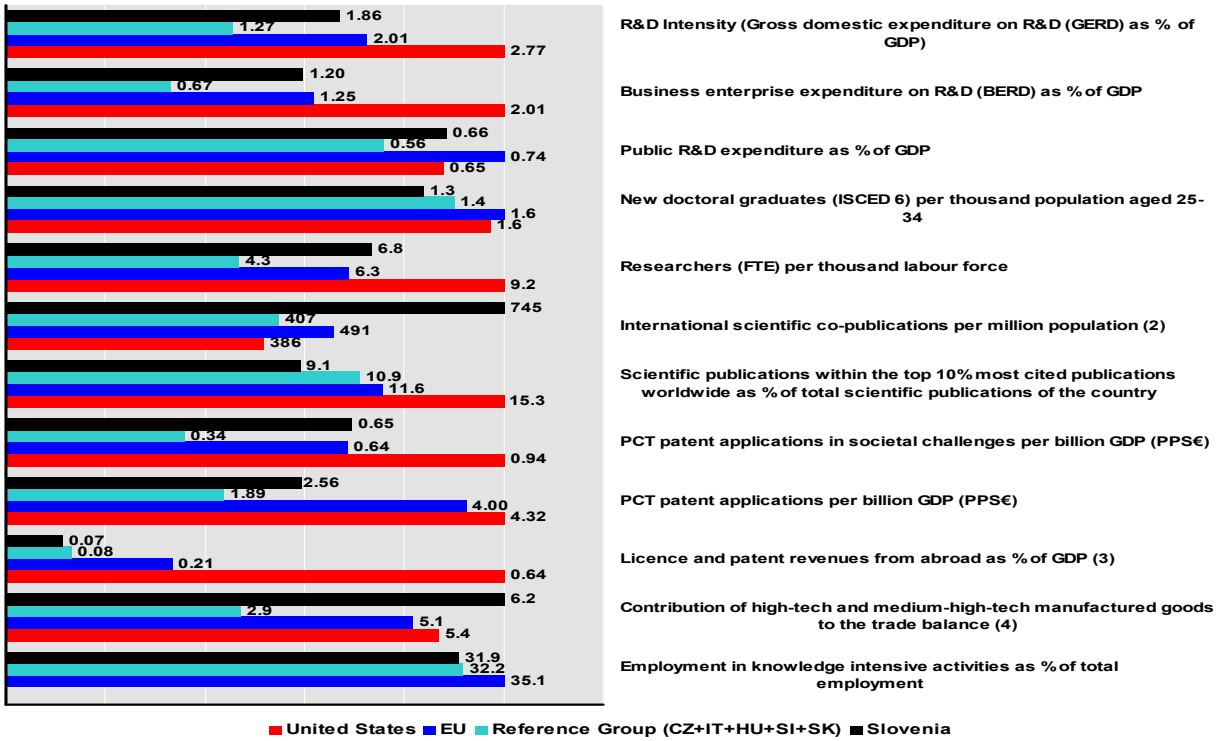
Research and Innovation Performance

Slovenia is making continuous progress in its innovation performance. Based on its average innovation performance, it is one of the moderate innovators with several indicators close or

above to the EU average[1]. The country's research and innovation performance shows strengths and weaknesses. In terms of strengths, Slovenia scores higher than the EU average in the share of international scientific co-publications, the contribution of high-tech and medium-high-tech manufactured goods to the trade balance and the PCT patent applications in societal challenges. Slovenia is above EU average in the number of researchers in the labour force. Besides, Slovenia is making progress in certain indicators, particularly in the area of employment in knowledge intensive activities. However, there are also some weaknesses in the research and innovation system. Slovenia scores lower than the EU average in scientific quality, new doctoral graduates and in the field of licence and patent revenues from abroad as percentage of GDP. In spite of a good dynamics towards a higher scientific excellence, there is still progress to be made.

Slovenia

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.
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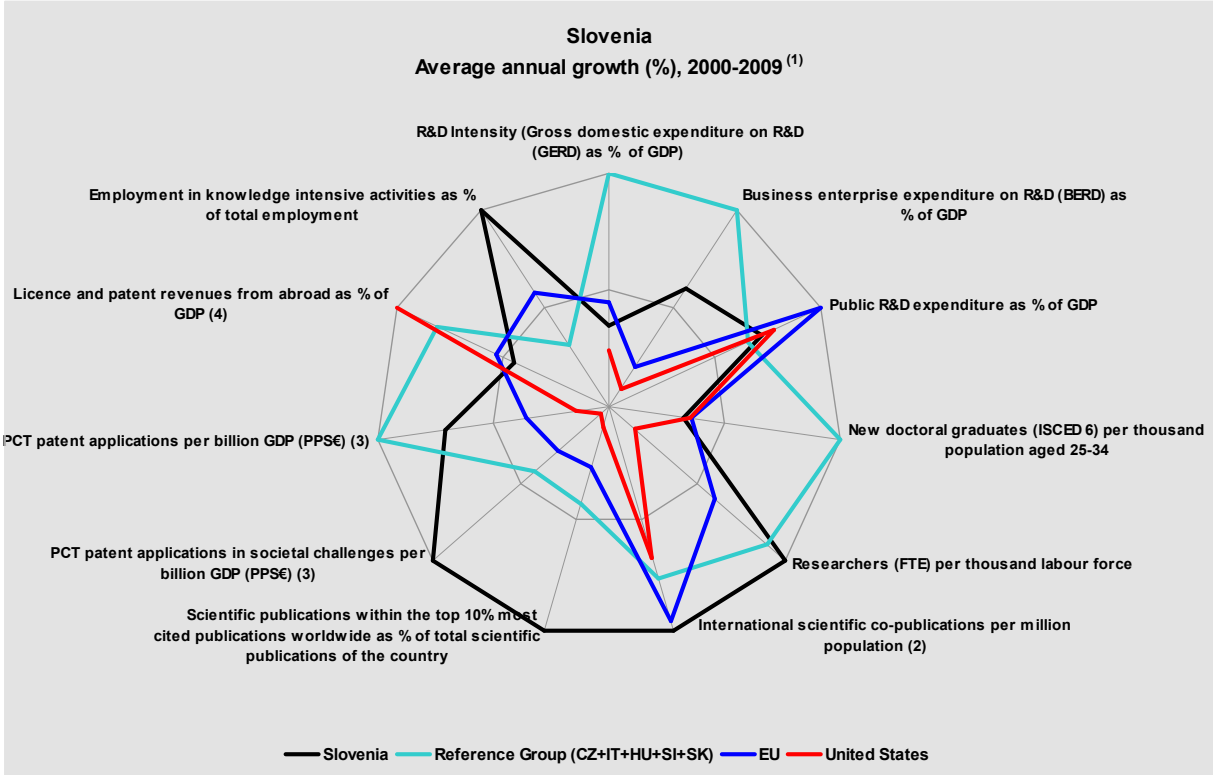
(3) EU refers to extra-EU.
(4) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU.
(5) Elements of estimation were involved in the compilation of the data.

Innovation Union Competitiveness report 2011

[1] Innovation Union Scoreboard 2010, The Innovation Union's performance scoreboard for Research and Innovation, http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2010

In dynamic terms, relative strengths and increases in the Slovenian science and innovation system, comparative to EU and reference group countries average, are in employment in knowledge intensive activities, most cited scientific publications, patenting intensity for societal challenges in which Slovenia consolidates its strong position. Relative lower dynamics are in licence and patents revenues from abroad and new doctoral graduates. It is noticeable the dynamics for improving scientific quality, where Slovenia is behind the EU average in absolute terms.



Source: DG Research and Innovation — Innovation Union Competitiveness report 2011

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) The EU value refers to the median rather than to the average.

(3) Average annual growth refers to real growth.

(4) EU refers to extra-EU.

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

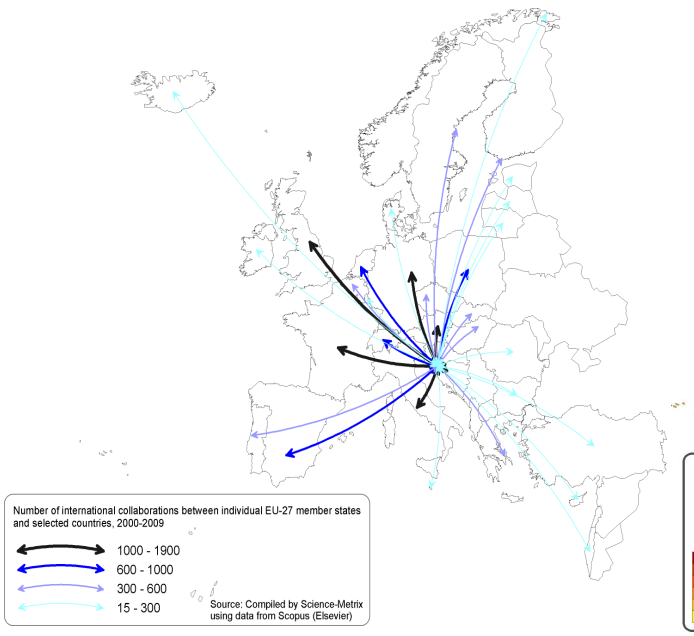
Participation in the European Research Area: Scientific and Technological collaborations

The partner countries reflect particular geographical, cultural and/or linguistic ties between certain countries (e.g. Slovenia-Italy).

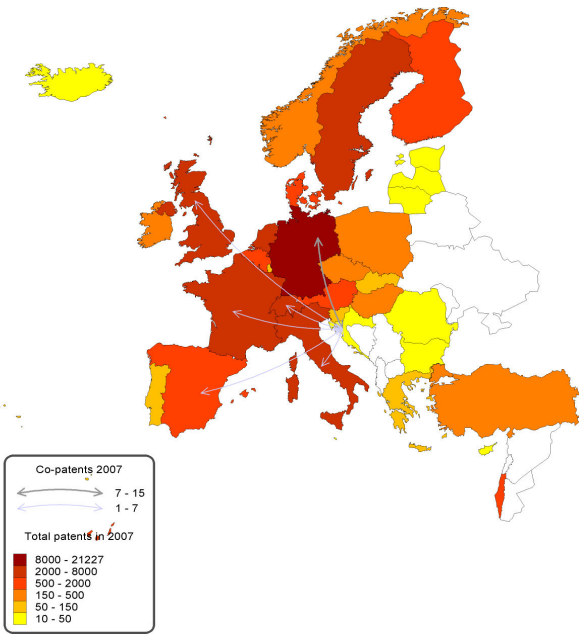
Slovenia's scientific cooperation (measured by co-publications) with other European countries is particularly intense. It is also broader and more intense than its technological cooperation (measured by co-patents), providing potential for growing internationalisation of the technology development. The main scientific partner countries are Germany, France, Italy, Spain, Austria and the United Kingdom, followed by countries such as Spain, Belgium, Switzerland and Poland.

Co-patenting collaboration of inventors in Slovenia with inventors in other European countries is intensive with France, Italy, the United Kingdom, Spain, Germany and Switzerland.

Co-publications between Slovenia and European countries in 2000-2009



Co-invented patent applications between Slovenia and European countries, 2007



Source: DG Research and Innovation
Data: Scopus/ Science Metrix and Eurostat

FP7 Key facts and figures

Applications:
As of 2011/03/16, a total of

- 2.317 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 3.042 applicants from Slovenia (1,14% of EU-27*) and
- requesting EUR 694,27m of EC contribution (0,79% of EU-27*)

Among the EU-27* Slovenia (SI) ranks:
- 19th in terms of number of applicants and
- 19th in terms of requested EC contribution

Success rates:

- The SI applicant success rate of 16,1% is lower than the EU-27* applicant success rate of 21,6%.
- The SI EC financial contribution success rate of 11,2% is lower than the EU-27* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 406 proposals were retained for funding (17,5%)
- involving 491 (16,1%) successful applicants from Slovenia and
- requesting EUR 77,93m (11,2%) of EC financial contribution

Among the EU-27*, Slovenia (SI) ranks:
- 26th in terms of applicants success rate and
- 23rd in terms of EC financial contribution success rate

Signed grant agreements
As of 2011/03/16, Slovenia (SI) participates in

- 366 signed grant agreements
- involving 5.201 participants of which 443 (8,52%) are from Slovenia
- benefiting from a total of EUR 1.328,06m of EC financial contribution of which EUR 73,30m (5,52%) is dedicated to participants from Slovenia.

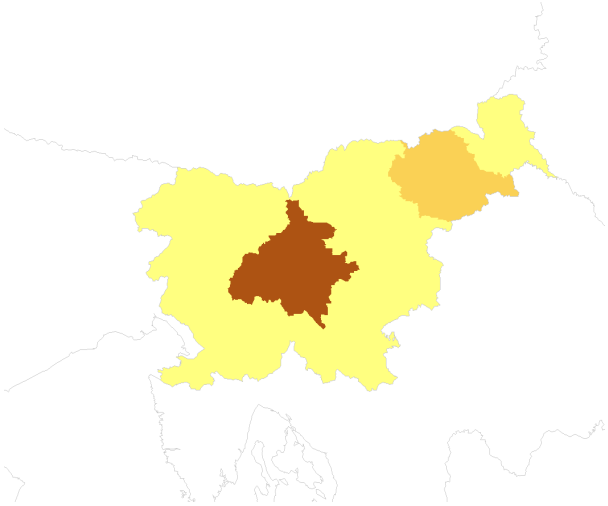
Among the EU-27* in all FP7 signed grant agreements, Slovenia (SI) ranks:
- 19th in number of participations and
- 18th in budget share

SME performance and participation

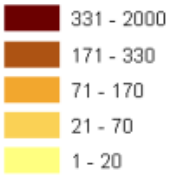
- The SI SME applicant success rate of 13,51% is lower than the EU-27* SME applicant success rate of 19,33%.
- The SI SME EC financial contribution success rate of 11,70% is lower than the corresponding EU-27* rate of 18,26%.

Specifically,

**Nr. of Researchers		
as % of population	N/A	0,40%
Rank in EU-27* Innovation scoreboard (2008)	- 14th	
- Below EU-27 average		
- Innovation Follower		
Nr. of FP7 applicants		
(% EU-27*)	3.042	
(1,14%)	266.507	
Req. EC contribution by FP7 applicants in EUR million		
(% EU-27*)	694,27	
(0,79%)	88.295	
Nr. of successful FP7 applicants		
(% EU-27*)	491	
(0,83%)	59.199	
Req. EC contribution by successful FP7 applicants in EUR million		
(% EU-27*)	77,93	
(0,43%)	18.262,02	
Success rate FP7 applicants	16,1%	21,6%
Success rate FP7 EC contribution	11,2%	20,7%
Nr. of FP7 grant holders		
(% EU-27*)	443	
(0,86%)	51.279	
EC contribution to FP7 grant holders in EUR million		
(% EU-27*)	73,30	
(0,44%)	16.578,15	
Nr. of FP7 coordinators		
(% of grant holders)	23	
(5,19%)	9.383	
(18,30%)		
Nr. of FP7 SME grant holders		
(% grant holders)	92	
(20,77%)	8.845	
(17,25%)		
EC contribution to FP7 SME grant holders in EUR million		
(% of grant holders)	16,71	
(22,80%)	2.207,73	
(13,32%)		



- 1.140 SI SME applicants requesting EUR 213,39m
- 154 (13,51%) successful SMEs requesting EUR 24,98m (11,70%)



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

- 92 SI SME grant holders, i.e., 20,77% of total SI participation
- EUR 16,71m, i.e., 22,80% of total SI budget share

Top 3 collaborative links with:

- DE - Germany (570)
- IT - Italy (443)
- UK - United Kingdom (426)

SI - Slovenia - 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	561	159,67	60	10,70 %	17,13	10,73 %
Research for the benefit of SMEs	366	51,06	44	12,02 %	5,94	11,63 %
Socio-economic sciences and Humanities	292	50,89	18	6,16 %	1,70	3,35 %
Marie-Curie Actions	247	n/a	55	22,27 %	n/a	n/a
Environment (including Climate Change)	241	43,47	55	22,82 %	9,99	22,99 %
Health	210	57,19	34	16,19 %	5,64	9,86 %

SI - Slovenia - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all SI grant holders	EC contribution (EUR million)	% of total EC contribution to SI
Information and Communication Technologies	63	14,22%	16,93	23,10 %
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	38	8,58%	8,56	11,68 %
Transport (including Aeronautics)	33	7,45%	7,49	10,22 %
Marie-Curie Actions	47	10,61%	7,34	10,01 %
Environment (including Climate Change)	45	10,16%	7,26	9,91 %
Research for the benefit of SMEs	42	9,48%	5,42	7,40 %

SI - Slovenia - 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	% ot total EC contribution to grant holders
HES	994	204,27	146	14,69%	19,45	9,52%	127	19,59	26,72%
PRC	788	155,07	94	11,93%	18,45	11,90%	103	19,32	26,36%
REC	689	152,71	147	21,34%	26,33	17,24%	133	26,60	36,29%
OTH	258	42,52	39	15,12%	6,57	15,45%	13	0,99	1,34%
PUB	212	29,33	65	30,66%	7,13	24,32%	67	6,81	9,28%
SME	1.140	213,39	154	13,51%	24,98	11,70%	92	16,71	22,80%

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

SI - Slovenia - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
SI - Slovenia region	Number of grant holders	% of all SI - Slovenia grant holders	EC contribution (M euro)	% of total EC contribution to SI
Osrednjeslovenska (SI021)	357	80,59%	61,37	83,72%
Podravska (SI012)	33	7,45%	4,71	6,42%
Savinjska (SI014)	13	2,93%	2,16	2,94%
Obalno-kraska (SI024)	10	2,26%	0,79	1,07%
Goriska (SI023)	8	1,81%	1,53	2,08%

SI - Slovenia - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	Number of Participations	% of all SI grant holders	EC contribution (M euro)	% of total EC contribution to SI grant holders
INSTITUT JOZEF STEFAN (JSI)	72	16,25%	17,76	24,23%
UNIVERZA V LJUBLJANI (UL)	89	20,09%	15,08	20,57%
UNIVERZA V MARIBORU (UM)	17	3,84%	2,33	3,18%
XLAB RAZVOJ PROGRAMSKE OPREME IN SVETOVANJE D.O.O.	6	1,35%	2,18	2,97%
KEMIJSKI INSTITUT (KI)	10	2,26%	2,00	2,73%

NOTES:
Report generated on: 2011/03/28,10:50 AM
FP7 proposal and application figures are valid as of the 2011/03/16
FP7 grant agreements and participation figures are valida as of the 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