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COMMISSION STAFF WORKING PAPER

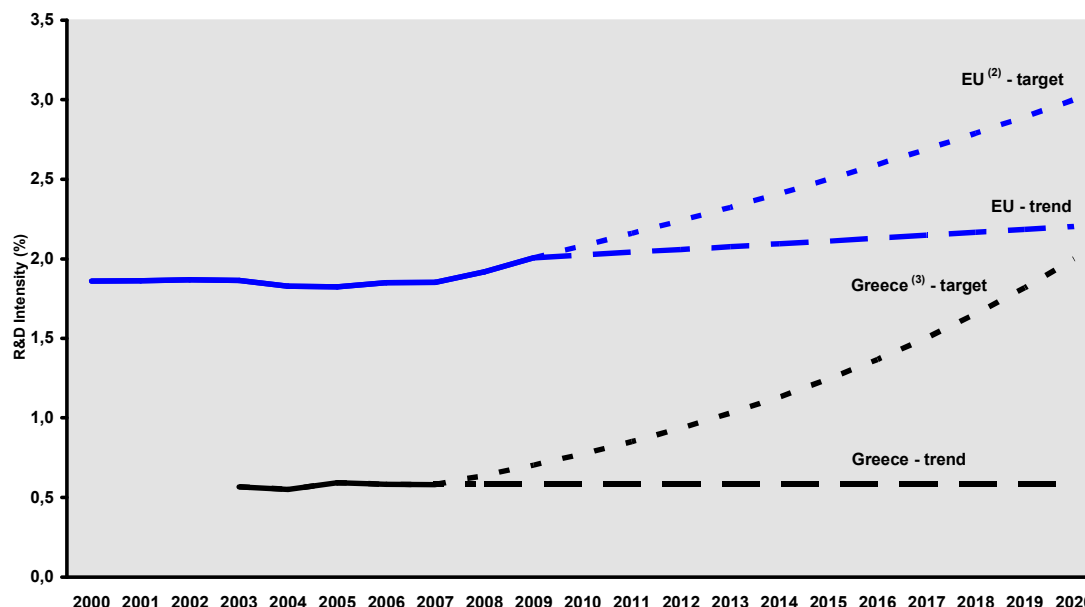
Innovation Union Competitiveness report 2011



Progress towards meeting the Europe 2020 R&D intensity target

In the last decade, R&D intensity in Greece has stagnated remaining at 0.58% of GDP. This stagnation has been caused by a decrease in the already very low private R&D intensity, which fell from 0.19% to 0.16% in 2007, i.e. an average annual fall rate of 2.1%. Public R&D intensity on the other hand slightly increased, passing from 0.39% to 0.42%. It should be noted that overall GERD investment growth in Greece has been significant, but this growth was not as high as the rapid GDP growth during the years 2000-2006, hence the fall in R&D intensity.

Greece - 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 case of the EU and for 2001-2007 in the case of Greece.

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

(3) EL: This projection is based on a tentative R&D Intensity target of 2.0% for 2020.

Research and Innovation Performance

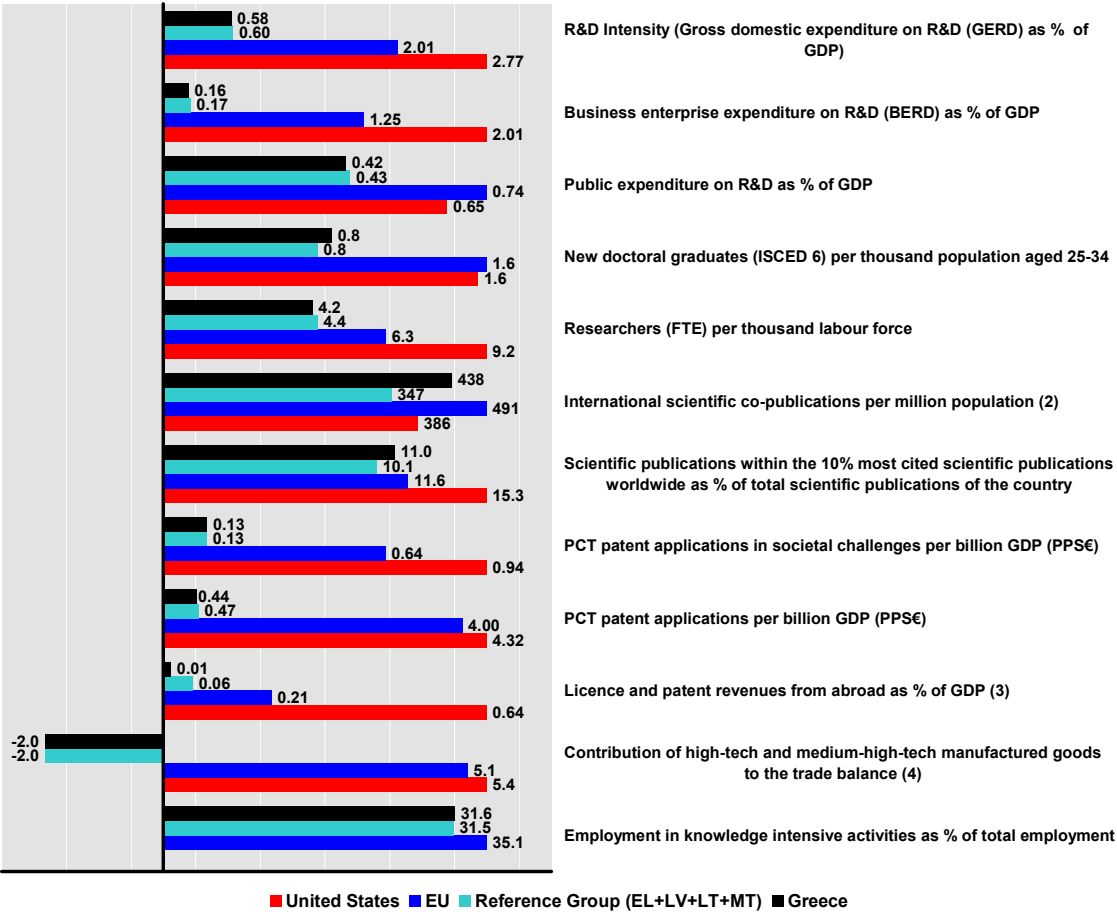
Greece is one of the moderate innovators with a performance below the EU average¹. Actions to foster the research and innovation capacity will depend significantly on the financing from EU Structural Funds both at national and regional level: over the period 2007-2013. Greece is expected to spend around 4 billion Euros on innovation. There is a large potential for job

¹ IUS 2010

creation by strengthening the business environment, reinforcing R&D and innovation and making the relationship between the public and the private sector more dynamic. Existing and planned programs support R&D&I in enterprises, in particular SMEs. The success of these programmes is linked also with the need to increase the capacity of absorption of the R&D and innovation system. The innovativeness of the Greek economy is of a "catching-up" kind, depending on imported technology and know-how. It flourishes thanks to organisational and marketing innovations and less on the production and exploitation of new knowledge. EU programmes (the Research Framework Programme and the Structural Funds) play a major role in both R&D and innovation activity in Greece.

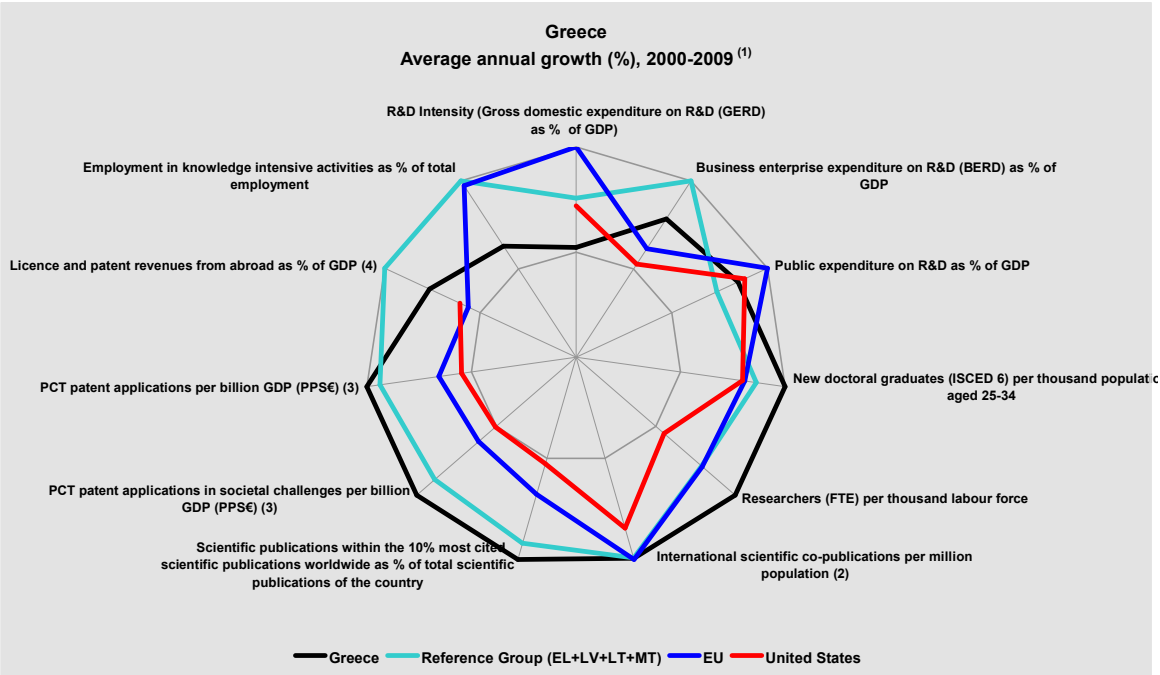
In the field of human resources for research, Greece is below the EU average with 4.2 researchers (FTE) per thousand labour force (the EU average is 6.3). While these figures are low the number of researchers and the new doctoral graduates (ISCED 6) per thousand population aged 25-34 have been growing at a faster rate than the EU average (over the period 2000-2008), indicating that a catching up is underway.

Greece
R&D profile, 2009 ⁽¹⁾



Source: DG Research and Innovation
 Innovation Union Competitiveness Report 2011
 Data: Eurostat, OECD, Science Matrix / 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.
 (4) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU; (iii) LV, LT and MT are not included in the Reference Group.
 (5) Elements of estimation were involved in the compilation of the data.

The Greek national innovation system has grown faster than the EU on average enhancing human resources, scientific quality and technological capacity. However, private sector is less dynamic in what respect total expenditure on R&D, thus reflecting the low demand for research-based knowledge from business enterprises. Restricted access to capital, especially for new firms, due to the reluctance of the financial institutions to finance innovation and risky investments is also among the factors hindering mobilisation of resources for R&D.



Source: DG Research and Innovation
 Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)
 Innovation Union Competitiveness Report 2011

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.

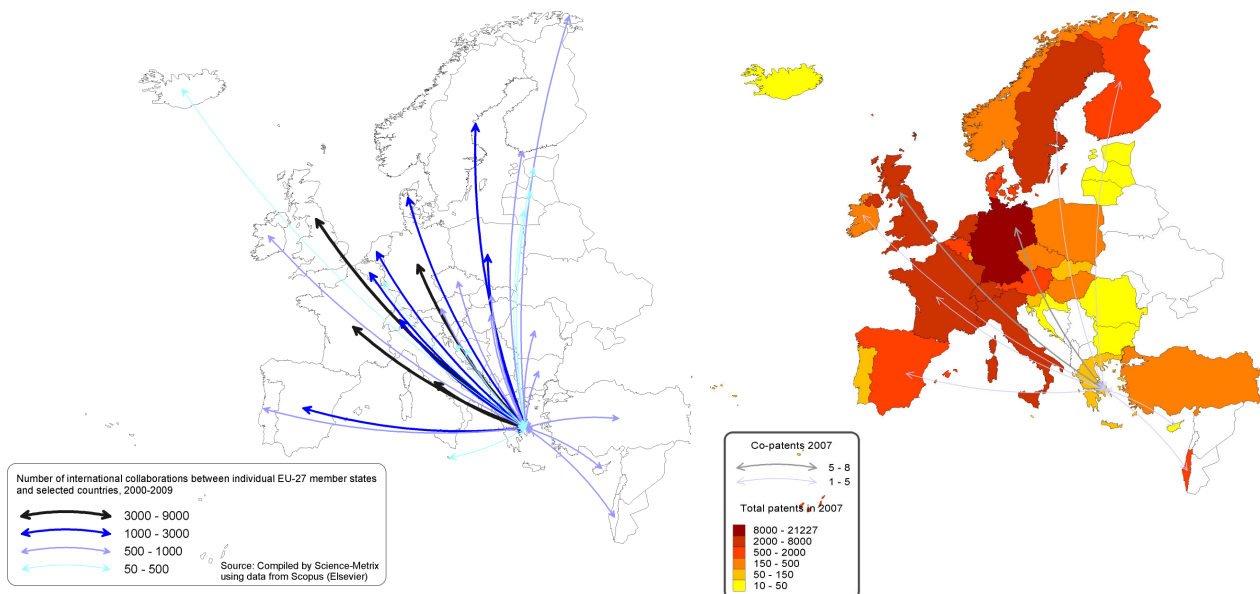
Participation in the European Research Area: Scientific and Technological collaborations

Greece is well placed regarding scientific production, reaching close to the average EU figures, 438 co-publications per million population against 491 for the EU average. Reinforcing this indicator, Greece is above the average in the scientific publications within the top 10% most cited publications worldwide as a percentage of total scientific publications of the country. These two results indicate that Greek research is of a good degree of quality and show a considerable achievement given the lower share of Greek researchers. In addition, Greece is in a leading position with regard to FP7 collaborative links with European countries per 1000 researchers FTE (see Part II, chapter 4 of this report). This favourable position is partly due to the fact that Greece has a smaller number of researchers than most of the EU countries.

Technological collaboration as expressed through co-patenting applications is very modest, when compared with the EU average. More than 65% of the total patent applications are made by a single inventor and thus less than 35% in collaboration. From these, 7.4% are co-patents involving a non EU country, a low figure which highlights the need for more collaboration and internationalisation of the technological innovation activities.

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

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



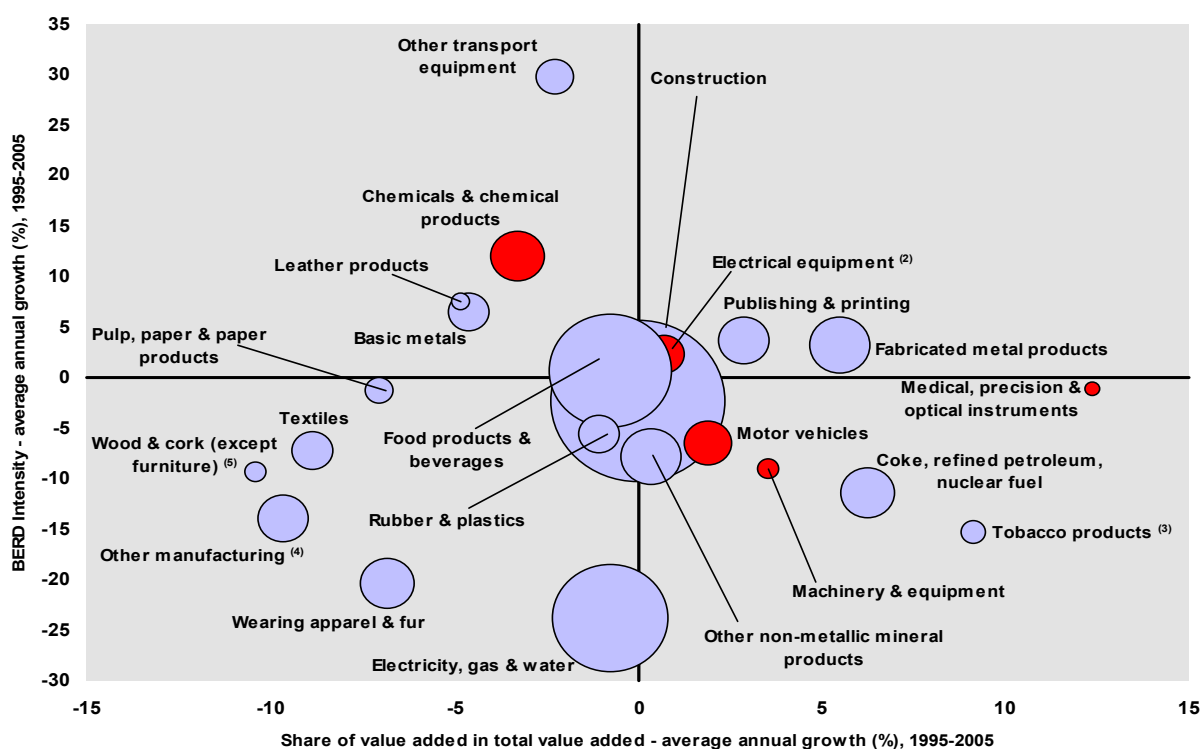
Source: DG Research and Innovation
Data: Scopus/ Science Metrix and Eurostat

Structural change towards a more knowledge-intensive economy

Greece experienced big changes in its industrial structure after 1995. During the period 1995-2005, an increase was registered in the share of BERD by both manufacturing and services, manufacturing representing 56% and services 36%. Business R&D is concentrated in 4 sectors, accounting for more than 51% of BERD. In Greece, 12 sectors account for more than 80% of industrial R&D, with the Radio, TV and Communications Equipment sector and the Computer Services sector holding the leading share of 40%. Chemicals and chemical products forms the third sector, with a 9% share of total business enterprise R&D.

The graph below illustrates the lack of dynamism of the economy towards more research intensive sectors. The economic structure of the country has slightly shifted towards less research oriented activities. The small increase registered in BERD after 1995 (with a negative trend in the period post 2000) has been caused by the increase in the research intensity of few individual sectors, in particular the chemicals and chemical products sector.

Greece - Share of value added versus BERD Intensity - average annual growth, 1995-2005



Source: DG Research and Innovation

Innovation Union Competitiveness report 2011

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) Electrical equipment includes: 'Office, accounting and computing machinery', 'Electrical machinery and apparatus', and 'Radio, TV and communication equipment'.

(3) 'Tobacco products': average annual growth refers to 2000-2005.

(4) 'Other manufacturing': average annual growth refers to 1995-2003.

(5) 'Wood & cork (except furniture)': average annual growth refers to 1995-2004.

(6) 'Recycling' is not included on the graph.

FP7 Key facts and figures

Applications:

As of 2011/03/16, a total of

- 8.157 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 12.177 applicants from Greece (4,57% of EU-27*) and
- requesting EUR 3.798,98m of EC contribution (4,30% of EU-27*)

Among the EU-27* Greece (EL) ranks:

- 7th in terms of number of applicants and
- 7th in terms of requested EC contribution

Success rates:

- The EL applicant success rate of 16,2% is lower than the EU-27* applicant success rate of 21,6%.
- The EL EC financial contribution success rate of 13,0% is lower than the EU-27* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 1.371 proposals were retained for funding (16,8%)
- involving 1.976 (16,2%) successful applicants from Greece and
- requesting EUR 495,31m (13,0%) of EC financial contribution

Among the EU-27*, Greece (EL) ranks:

- 25th in terms of applicants success rate and
- 19th in terms of EC financial contribution success rate

Signed grant agreements

As of 2011/03/16, Greece (EL) participates in

- 1.205 signed grant agreements
- involving 14.476 participants of which 1.769 (12,22%) are from Greece
- benefiting from a total of EUR 3.950,69m of EC financial contribution of which EUR 481,91m (12,20%) is dedicated to participants from Greece.

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

- 9th in number of participations and
- 9th in budget share

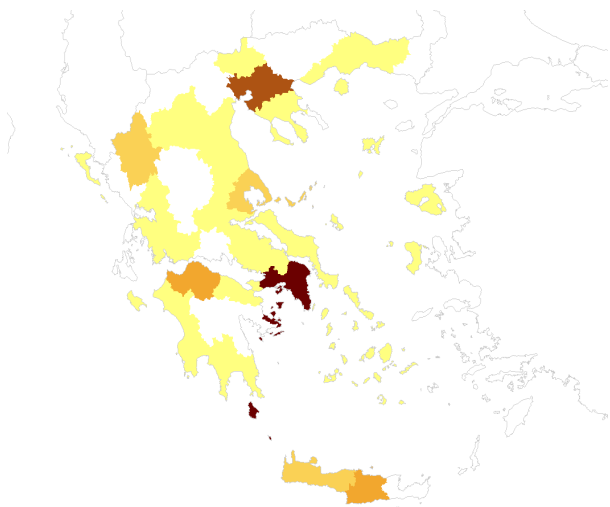
SME performance and participation

- The EL SME applicant success rate of 12,87% is lower than the EU-27* SME applicant success rate of 19,33%.
- The EL SME EC financial contribution success rate of 11,28% is lower than the corresponding EU-27* rate of 18,26%.

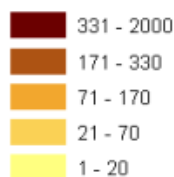
Specifically,

- 3.373 EL SME applicants requesting EUR 840,81m

**Nr. of Researchers as % of population	N/A	0,40%
Rank in EU-27* Innovation scoreboard (2008)	- 18th	
- Below EU-27 average		
- Moderate Innovator		
Nr. of FP7 applicants (% EU-27*)	12.177	
(4,57%)	266.507	
Req. EC contribution by FP7 applicants in EUR million (% EU-27*)	3.798,98	
(4,30%)	88.295	
Nr. of successful FP7 applicants (% EU-27*)	1.976	
(3,34%)	59.199	
Req. EC contribution by successful FP7 applicants in EUR million (% EU-27*)	495,31	
(2,71%)	18.262,02	
Success rate FP7 applicants	16,2%	21,6%
Success rate		
FP7 EC contribution	13,0%	20,7%
Nr. of FP7 grant holders (% EU-27*)	1.769	
(3,45%)	51.279	
EC contribution to FP7 grant holders in EUR million (% EU-27*)	481,91	
(2,91%)	16.578,15	
Nr. of FP7 coordinators (% of grant holders)	352	
(19,90%)	9.383	
Nr. of FP7 SME grant holders (% grant holders)	304	
(17,18%)	8.845	
(17,25%)		
EC contribution to FP7 SME grant holders in EUR million (% of grant holders)	71,12	
(14,76%)	2.207,73	
(13,32%)		



- 434 (12,87%) successful SMEs requesting EUR 94,85m (11,28%)



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

- 304 EL SME grant holders, i.e., 17,18% of total EL participation
- EUR 71,12m, i.e., 14,76% of total EL budget share

Top 3 collaborative links with:

- DE - Germany (1.634)
- UK - United Kingdom (1.372)
- IT - Italy (1.232)

EL - Greece - 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	3.920	1.381,00	461	11,76 %	169,81	12,30 %
Research for the benefit of SMEs	1.215	146,64	199	16,38 %	20,73	14,14 %
Marie-Curie Actions	1.124	n/a	297	26,42 %	n/a	n/a
Transport (including Aeronautics)	940	224,89	177	18,83 %	38,97	17,33 %
Environment (including Climate Change)	863	219,17	118	13,67 %	25,99	11,86 %
Security	538	152,67	84	15,61 %	24,39	15,98 %

EL - Greece - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all EL grant holders	EC contribution (EUR million)	% of total EC contribution to EL
Information and Communication Technologies	466	26,34%	164,80	34,20 %
Marie-Curie Actions	236	13,34%	37,48	7,78 %
Research Potential	31	1,75%	34,24	7,11 %
Transport (including Aeronautics)	154	8,71%	31,48	6,53 %
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	104	5,88%	31,30	6,49 %
Health	82	4,64%	26,83	5,57 %

EL - Greece - 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	4.091	1.162,46	644	15,74%	150,95	12,99%	566	149,37	31,00%
REC	3.360	1.135,05	666	19,82%	178,48	15,72%	661	208,39	43,24%
PRC	3.253	822,26	476	14,63%	111,93	13,61%	459	116,63	24,20%
OTH	680	137,80	97	14,26%	12,52	9,08%	32	3,23	0,67%
PUB	428	73,20	81	18,93%	17,80	24,32%	51	4,29	0,89%
SME	3.373	840,81	434	12,87%	94,85	11,28%	304	71,12	14,76%

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

EL - Greece - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
EL - Greece region	Number of grant holders	% of all EL - Greece grant holders	EC contribution (M euro)	% of total EC contribution to EL
Attiki (EL300)	1.033	58,39%	291,58	60,51%
Thessaloniki (EL122)	232	13,11%	62,13	12,89%
Irakleio (EL431)	172	9,72%	51,16	10,62%
Achaia (EL232)	111	6,27%	29,84	6,19%
Magnisia (EL143)	45	2,54%	6,22	1,29%

EL - Greece - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	Number of Participations	% of all EL grant holders	EC contribution (M euro)	% of total EC contribution to EL grant holders
FOUNDATION FOR RESEARCH AND TECHNOLOGY HELLAS (FORTH)	147	8,31%	47,73	9,91%
CENTRE FOR RESEARCH AND TECHNOLOGY HELLAS (CERTH)	92	5,20%	32,24	6,69%
NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA)	92	5,20%	31,19	6,47%
NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"	65	3,67%	26,44	5,49%
INSTITUTE OF COMMUNICATION AND COMPUTER SYSTEMS (ICCS)	64	3,62%	25,06	5,20%

NOTES:

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

FP7 grant agreements and participation figures are valid 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](#)