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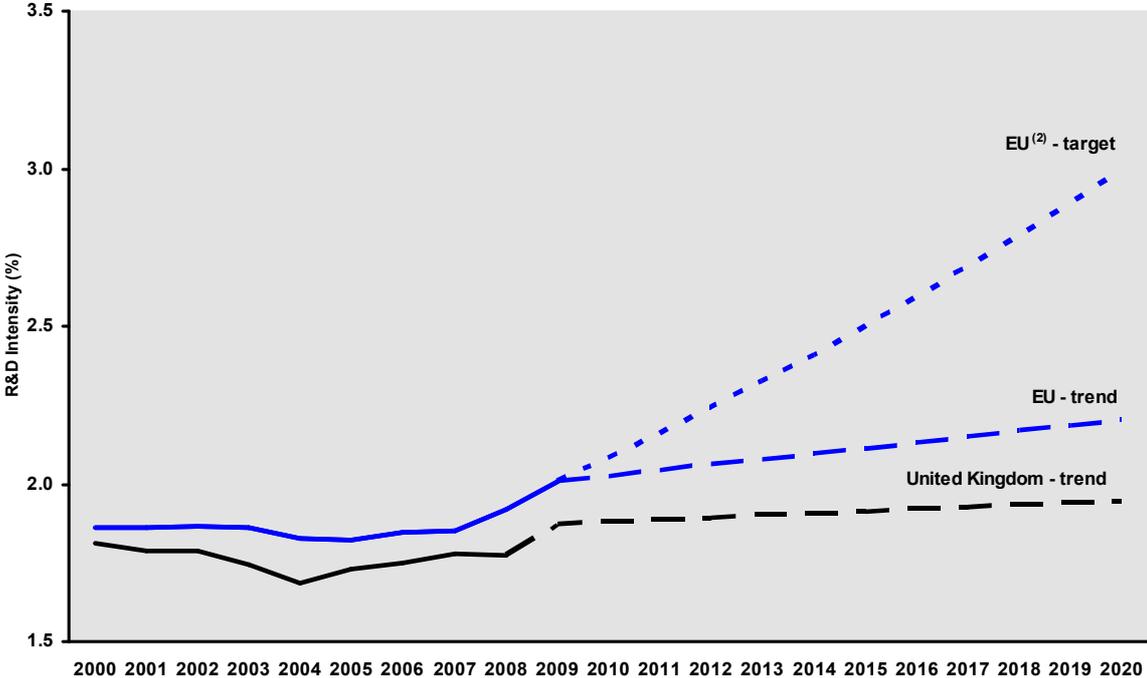
**COMMISSION STAFF WORKING PAPER**

**Innovation Union Competitiveness report 2011**

**Progress towards meeting the Europe 2020 R&D intensity target**

In the last decade, R&D intensity in the United Kingdom averaged around 1.8%, the latest figure being 1.87% in 2009<sup>1</sup>. The trend over the reference period showed an initial fall followed by a mild recovery since 2005. At present, R&D intensity in the United Kingdom falls below the EU average. Although the recent cutbacks in public expenditure have not severely hit research budgets, further measures to boost both public and private R&D may be needed to bridge the R&D gap with the EU average and, especially, with other trading competitors.

**United Kingdom - R&D Intensity projections, 2000-2020 <sup>(1)</sup>**



Source: DG Research and Innovation  
 Data: DG Research and Innovation, Eurostat  
 Innovation Union Competitiveness Report 2011  
 Notes: (1) The R&D Intensity projections based on trends are derived from the average annual growth in R&D Intensity for 2000-2009.  
 (2) EU: This projection is based on the R&D Intensity target of 3.0% for 2020.

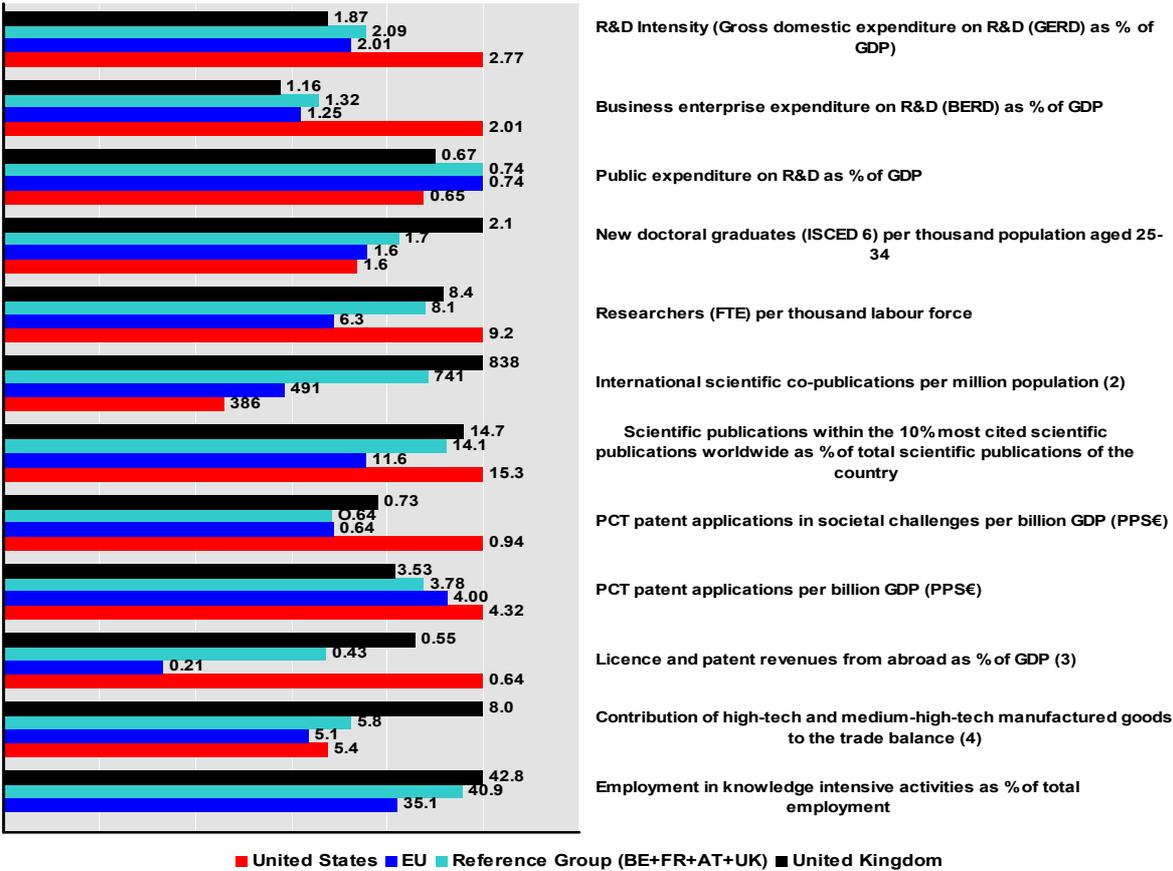
**Research and Innovation Performance**

The British research and innovation system is characterised by a strong performance on a range of research and innovation indicators, such as high quality publications, high quality patents for which it obtains high licence and patent revenues from abroad or the high share of the population working in knowledge intensive activities. In all these key indicators, the United Kingdom outperforms both the EU average and a group of similar countries and nears the United States. A number of world class Universities, a large share of young doctoral graduates and competitive strengths in some high-tech and medium-high tech sectors such as the pharmaceutical sector can account for this strong performance. On the other hand, the

<sup>1</sup> 2009 figures are provisional

system underperforms in terms of public and private R&D investment and technological performance as measured by the importance of PCT patents in the economy. These lower values can be justified to some extent by the nature of the economic structure of the United Kingdom: when adjusting for the sectoral mix, the United Kingdom investment intensity gap is for instance only 0.25 points of GDP as compared with Germany and 0.5% points as compared with France. An R&D underinvestment could potentially affect the United Kingdom's future scientific and technological competitiveness, although it is important to note the contribution of other forms of innovative activity to these outcomes.

**United Kingdom**  
**R&D profile, 2009 <sup>(1)</sup>**

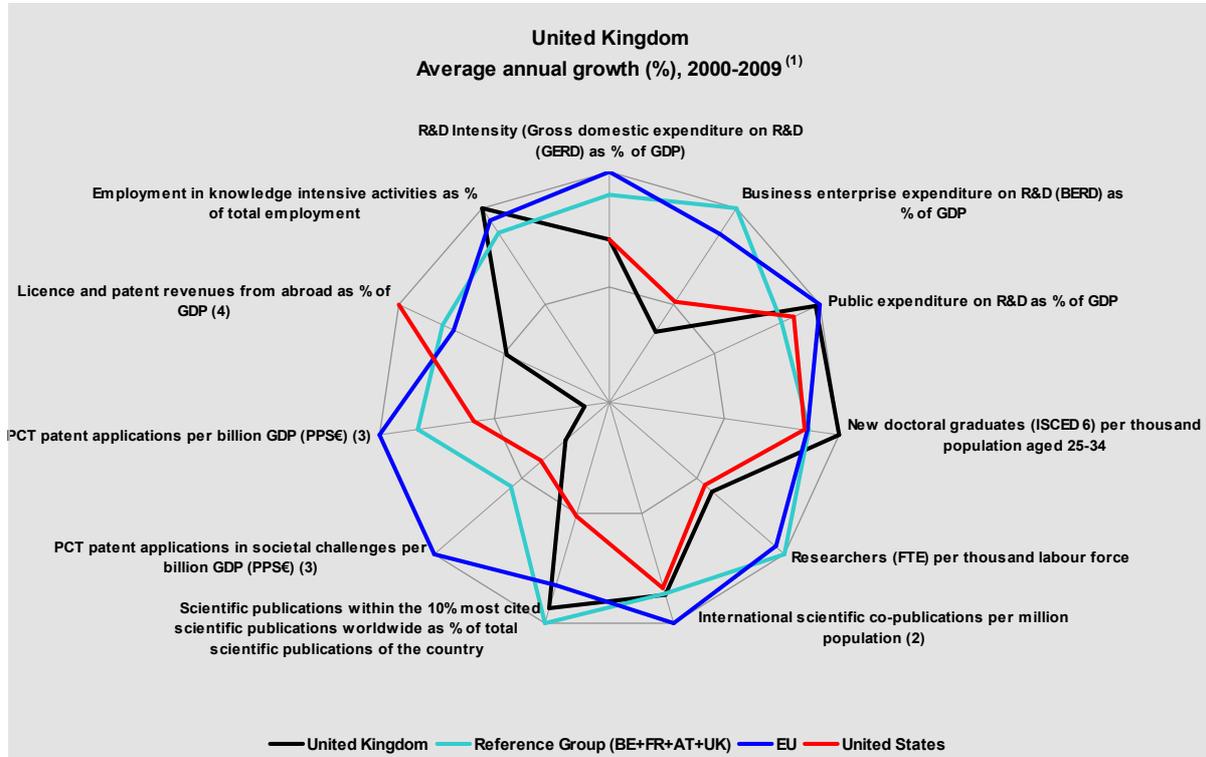


Source: DG Research and Innovation  
 Data: Eurostat, OECD, Science Metrix / Scopus (Elsevier)  
 Innovation Union Competitiveness Report 2011

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

Looked at in a longer perspective, in the last decade the United Kingdom public and especially private R&D investments lagged behind the EU and the United States. High quality scientific output grew at a similar rate as the reference group and the EU despite relatively lower growth of public R&D investments. It is welcome that, in a context where most UK Government Departments are facing significant expenditure cuts, the UK Government has

announced a Settlement for Science and Research programme of £ 4.6 billion per year for the next four years (2011-2015). This is ring fenced across the four year period. Furthermore, the UK announced that it will target its support for business towards areas with high impact on growth and leverage additional private sector investment<sup>2</sup>.



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

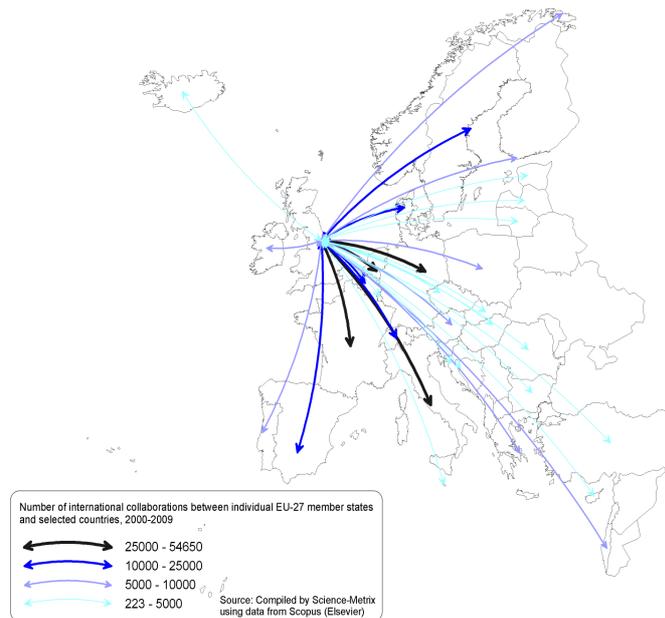
The United Kingdom is a very open scientific system as evidenced by the high level of co-publications. This allows tapping into international knowledge, enhancing excellence and

<sup>2</sup> The Technology Strategy Board will become the Government's prime channel to support business-led technology innovation and will be provided with additional funding of over £200m to establish a network of elite Technology and Innovation Centres.

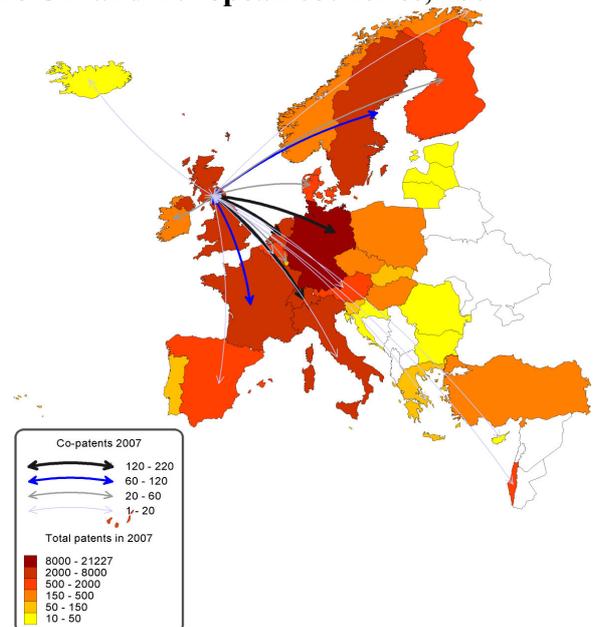
rendering the system more efficient. The main research partners in the European Research Area are Germany, France, Italy and the Netherlands, which reflects the size of the research systems of these countries.

A similar structure is replicated in terms of co-registration of patents, where Germany or the Netherlands become the main technological partners. It is important to note that Switzerland also ranks high in this list of technological partners and this is due to the closer linkages between the countries in key industries such as pharmaceuticals.

### Co-publications between the UK and European countries in 2000-2009



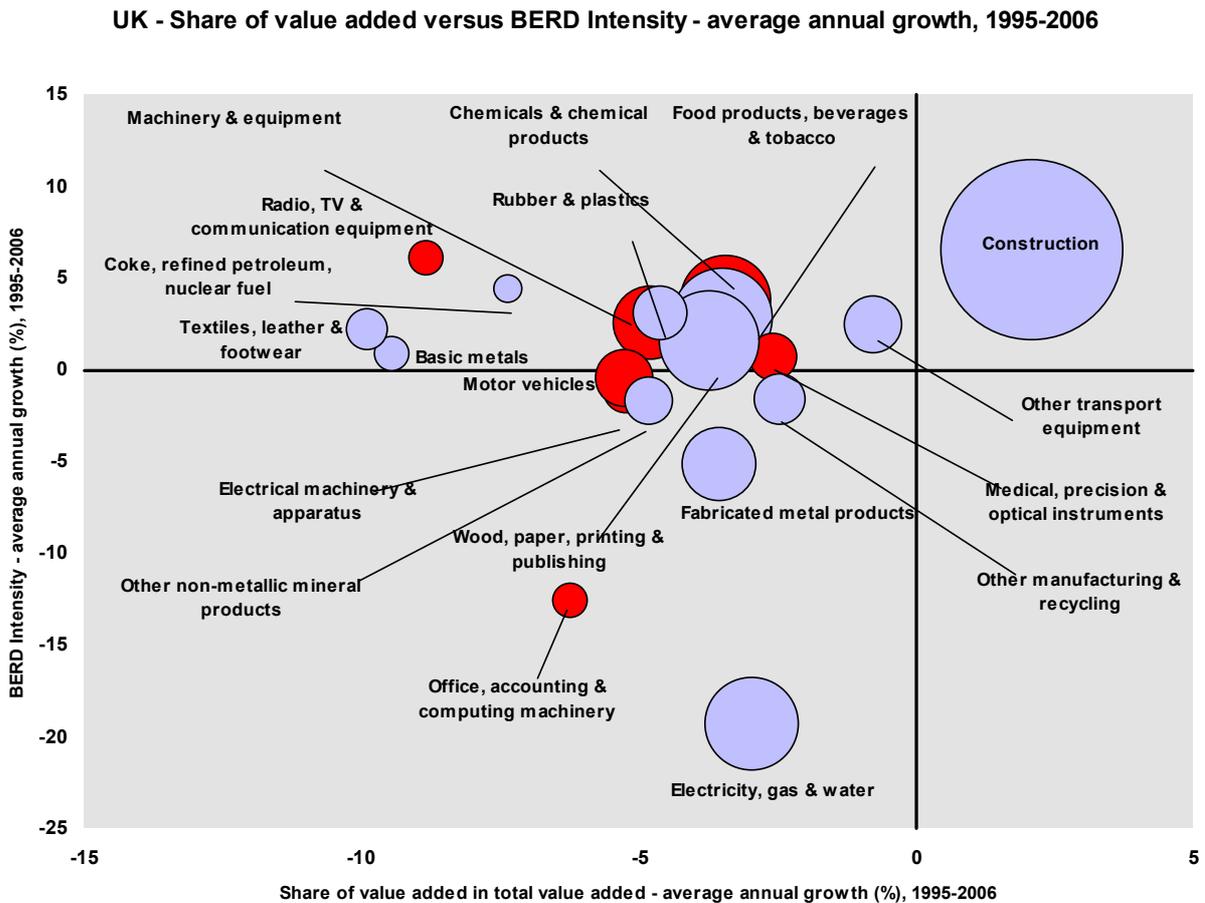
### Co-invented patent applications between the UK and European countries, 2007



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

**Structural change towards a more research-intensive economy**

In the last decade, private R&D intensity remained static around 1.2%. To a large extent, this performance was due to the loss in importance in the economy of some high-technology and medium-high technology sectors such as chemical and chemical products, machinery and equipment and office, machinery and computing equipment. In addition, the research intensity, measured as the investment in R&D as a percentage of total value added, of most sectors stagnated, or in some cases fell. This stagnation, in an increasingly globalised economy with countries sharply raising their R&D investments, could endanger the long-term competitiveness of these sectors<sup>3</sup>.



Source: DG Research and Innovation

Innovation Union Competitiveness report 2011

Data: OECD

Note: (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.

<sup>3</sup> Of course, the dynamics of an economy depends also of many other factors. See for instance, NESTA's report *The Vital 6%* and *High Growth Enterprises: What Governments can do to make a difference* (OECD, 2010).

# Overall review of EU Member States and Associated countries

## FP7 Key facts and figures

### Applications:

As of 2011/03/16, a total of

- 22.871 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 36.145 applicants from United Kingdom (13,56% of EU-27\*) and
- requesting EUR 13.071,00m of EC contribution (14,80% of EU-27\*)

Among the EU-27\* United Kingdom (UK) ranks:  
 - 2nd in terms of number of applicants and  
 - 2nd in terms of requested EC contribution

### Success rates:

- The UK applicant success rate of 24,1% is higher than the EU-27\* applicant success rate of 21,6%.
- The UK EC financial contribution success rate of 22,1% is higher than the EU-27\* rate of 20,7%.

Specifically, following evaluation and selection, a total of

- 5.272 proposals were retained for funding (23,1%)
- involving 8.721 (24,1%) successful applicants from United Kingdom and
- requesting EUR 2.886,06m (22,1%) of EC financial contribution

Among the EU-27\*, United Kingdom (UK) ranks:  
 - 6th in terms of applicants success rate and  
 - 6th in terms of EC financial contribution success rate

### Signed grant agreements

As of 2011/03/16, United Kingdom (UK) participates in

- 4.372 signed grant agreements
- involving 38.289 participants of which 7.287 (19,03%) are from United Kingdom
- benefiting from a total of EUR 11.621,96m of EC financial contribution of which EUR 2.698,98m (23,22%) is dedicated to participants from United Kingdom.

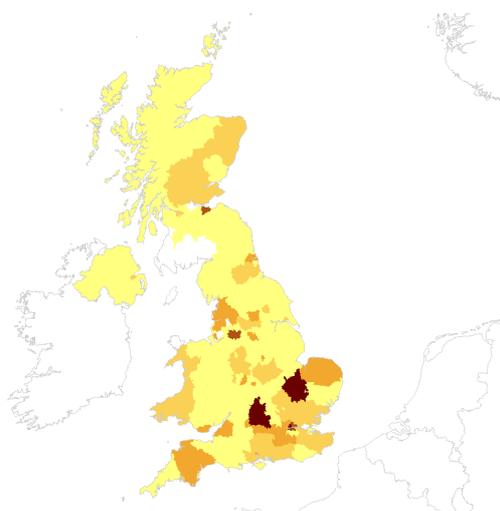
Among the EU-27\* in all FP7 signed grant agreements, United Kingdom (UK) ranks:  
 - 2nd in number of participations and  
 - 2nd in budget share

### SME performance and participation

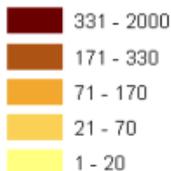
- The UK SME applicant success rate of 21,88% is higher than the EU-27\* SME applicant success rate of 19,33%.
- The UK SME EC financial contribution success rate of 21,26% is higher than the corresponding EU-27\* rate of 18,26%.

Specifically,

**Nr. of Researchers as % of population	N/A	0,40%
Rank in EU-27*		
Innovation scoreboard (2008)	- 4th	
- Above EU-27 average		
- Innovation Leader		
Nr. of FP7 applicants (% EU-27*)	36.145	
(13,56%)	266.507	
Req. EC contribution by FP7 applicants in EUR million		
(% EU-27*)	13.071,00	
(14,80%)	88.295	
Nr. of successful FP7 applicants (% EU-27*)	8.721	
(14,73%)	59.199	
Req. EC contribution by successful FP7 applicants in EUR million		
(% EU-27*)	2.886,06	
(15,80%)	18.262,02	
Success rate FP7 applicants	24,1%	21,6%
Success rate		
FP7 EC contribution	22,1%	20,7%
Nr. of FP7 grant holders (% EU-27*)	7.287	
(14,21%)	51.279	
EC contribution to FP7 grant holders in EUR million		
(% EU-27*)	2.698,98	
(16,28%)	16.578,15	
Nr. of FP7 coordinators (% of grant holders)	1.903	
(26,11%)	9.383	
(18,30%)		
Nr. of FP7 SME grant holders (% grant holders)	1.159	
(15,91%)	8.845	
(17,25%)		
EC contribution to FP7 SME grant holders in EUR million		
(% of grant holders)	340,03	
(12,60%)	2.207,73	
(13,32%)		



## Overall review of EU Member States and Associated countries

- 7.582 UK SME applicants requesting EUR 2.174,16m
  - 1.659 (21,88%) successful SMEs requesting EUR 462,16m (21,26%)
- 

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

- 1.159 UK SME grant holders, i.e., 15,91% of total UK participation
- EUR 340,03m, i.e., 12,60% of total UK budget share

### Top 3 collaborative links with:

- DE - Germany (4.981)
- FR - France (3.525)
- IT - Italy (3.157)

UK - United Kingdom - 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	7.385	3.109,15	1.178	15,95 %	494,52	15,91 %
Marie-Curie Actions	7.017	n/a	1.954	27,85 %	n/a	n/a
Health	3.490	1.829,10	920	26,36 %	456,49	24,96 %
Research for the benefit of SMEs	3.395	516,10	806	23,74 %	118,17	22,90 %
Transport (including Aeronautics)	2.321	760,79	649	27,96 %	218,48	28,72 %
European Research Council	2.127	3.301,66	373	17,54 %	612,25	18,54 %

UK - United Kingdom - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all UK grant holders	EC contribution (EUR million)	% of total EC contribution to UK
ERC	341	4,68%	492,00	18,23 %
Information and Communication Technologies	1.150	15,78%	460,37	17,06 %
Health	875	12,01%	408,81	15,15 %
Marie-Curie Actions	1.481	20,32%	356,54	13,21 %
Research Infrastructures	359	4,93%	178,52	6,61 %
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	440	6,04%	145,03	5,37 %

UK - United Kingdom - 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	19.973	5.953,80	4.744	23,75%	1.264,71	21,24%	4.391	1.838,45	68,12%
PRC	8.273	2.306,28	1.983	23,97%	577,40	25,04%	1.723	497,57	18,44%
REC	3.028	836,44	935	30,88%	267,75	32,01%	803	277,08	10,27%
OTH	1.697	404,88	400	23,57%	93,66	23,13%	121	22,38	0,83%
PUB	1.053	269,28	289	27,45%	70,68	26,25%	249	63,50	2,35%
<b>SME</b>	<b>7.582</b>	<b>2.174,16</b>	<b>1.659</b>	<b>21,88%</b>	<b>462,16</b>	<b>21,26%</b>	<b>1.159</b>	<b>340,03</b>	<b>12,60%</b>

## Overall review of EU Member States and Associated countries

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

UK - United Kingdom - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
UK - United Kingdom region	Number of grant holders	% of all UK - United Kingdom grant holders	EC contribution (M euro)	% of total EC contribution to UK
Inner London - West (UKI11)	1.362	18,69%	561,72	20,81%
Oxfordshire (UKJ14)	440	6,04%	233,71	8,66%
Cambridgeshire CC (UKH12)	417	5,72%	179,91	6,67%
Edinburgh, City of (UKM25)	256	3,51%	110,65	4,10%
Inner London - East (UKI12)	246	3,38%	86,25	3,20%

UK - United Kingdom - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	Number of Participations	% of all UK grant holders	EC contribution (M euro)	% of total EC contribution to UK grant holders
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	331	4,54%	157,07	5,82%
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD (University of Oxford)	278	3,82%	146,92	5,44%
IMPERIAL COLLEGE OF SCIENCE, TECHNOLOGY AND MEDICINE (Imperial)	283	3,88%	127,48	4,72%
UNIVERSITY COLLEGE LONDON	240	3,29%	127,41	4,72%
THE UNIVERSITY OF EDINBURGH	177	2,43%	89,12	3,30%

### 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 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](#)