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**COMMISSION STAFF WORKING PAPER**

**Innovation Union Competitiveness report 2011**

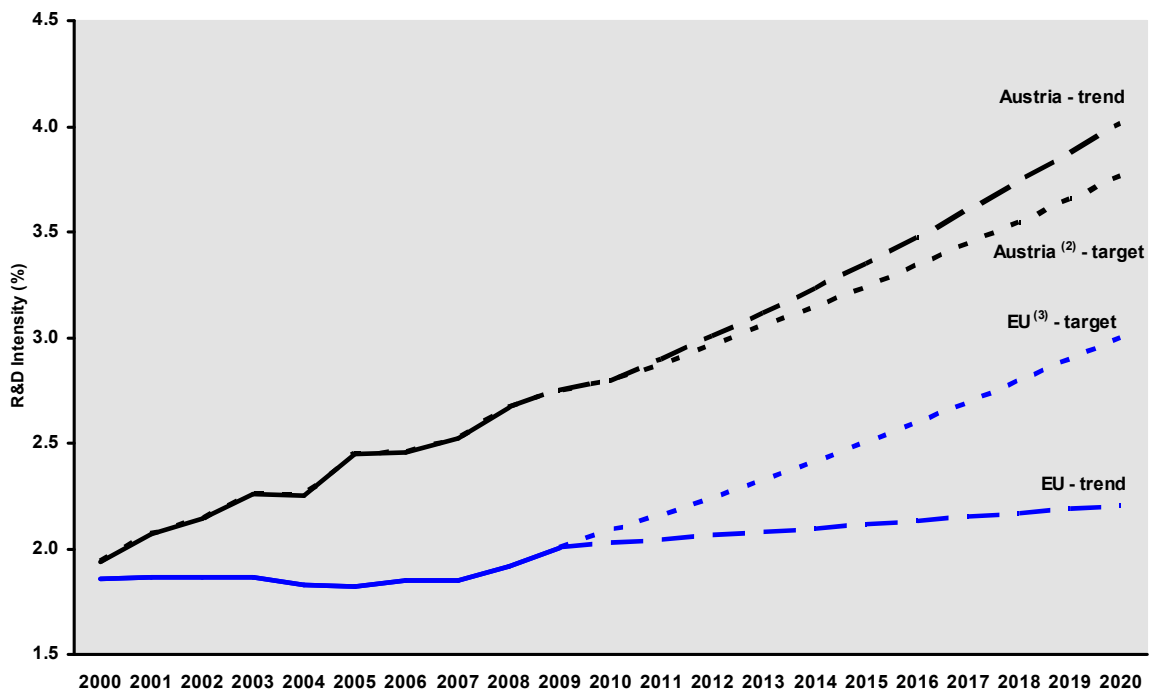
Progress towards meeting the Europe 2020 R&D intensity target

R&D intensity increased during past decade, from 1.94% in 2000 to 2.79% of GDP in 2009. This trend is significantly higher than the EU average and has allowed Austria to approach the 3% R&D target set for 2010.

If the trend from the last decade continued, Austria would approach an R&D intensity of 4%, positioning the country at the world forefront, with similar values to countries like Sweden, Finland, South Korea or Japan.

Both public and private R&D increased in the last decade, and in the last years, public R&D increased anti-cyclically, compensating the decrease in the share of business R&D due to the economic crisis. The federal government sector increased its share in overall R&D expenditures from 28% in 2007 to 35% in 2010, while the percentage of gross R&D financed by industry decreased to 43%, in comparison to 49% in 2007.

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



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 2000-2010 in the case of Austria.

(2) AT: This projection is based on a tentative R&D Intensity target of 3.76% for 2020.

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

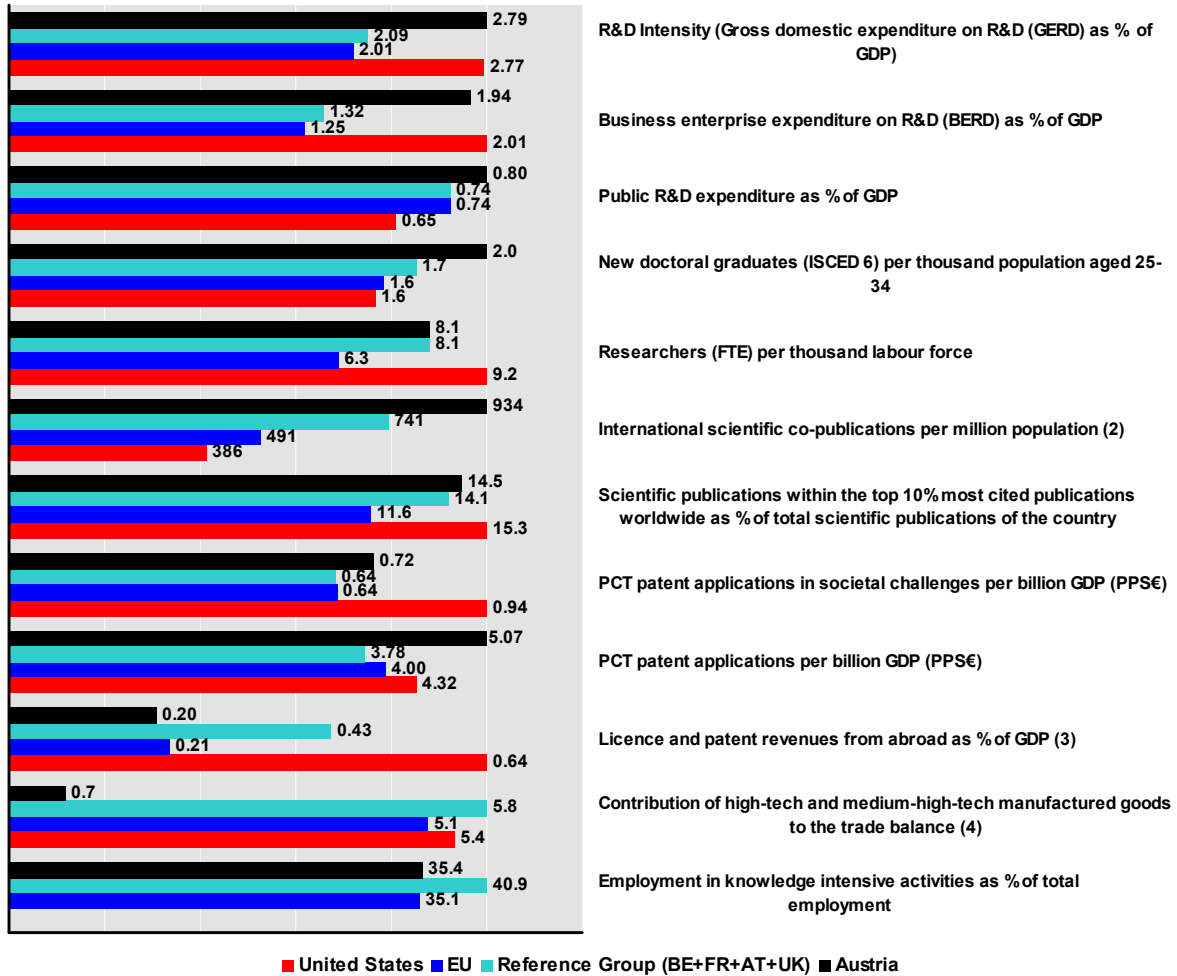
Research and Innovation Performance

The Austrian research and innovation system depicts a strong performance. The high R&D investments, especially in the private sector, are translated both into a high quality scientific production and a strong technological inventiveness capacity. In this respect, Austria outperforms the EU on average and approaches the United States in key indicators such as the share of high-impact publications or PCT patents. Strikingly enough, the translation of these efforts into purely economic terms does not appear clearly. In particular the contribution of high-tech and medium-tech manufactured goods to the trade balance outside of EU-27 is

much lower than average. This situation has been recognised by the Austrian authorities who have launched (March 2011) a Research, Technology and Innovation Strategy with a 2020 perspective to upgrade the innovativeness level of the economy as a whole and become a country at the "technological frontier" leading to higher productivity gains.

**Austria**

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



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.

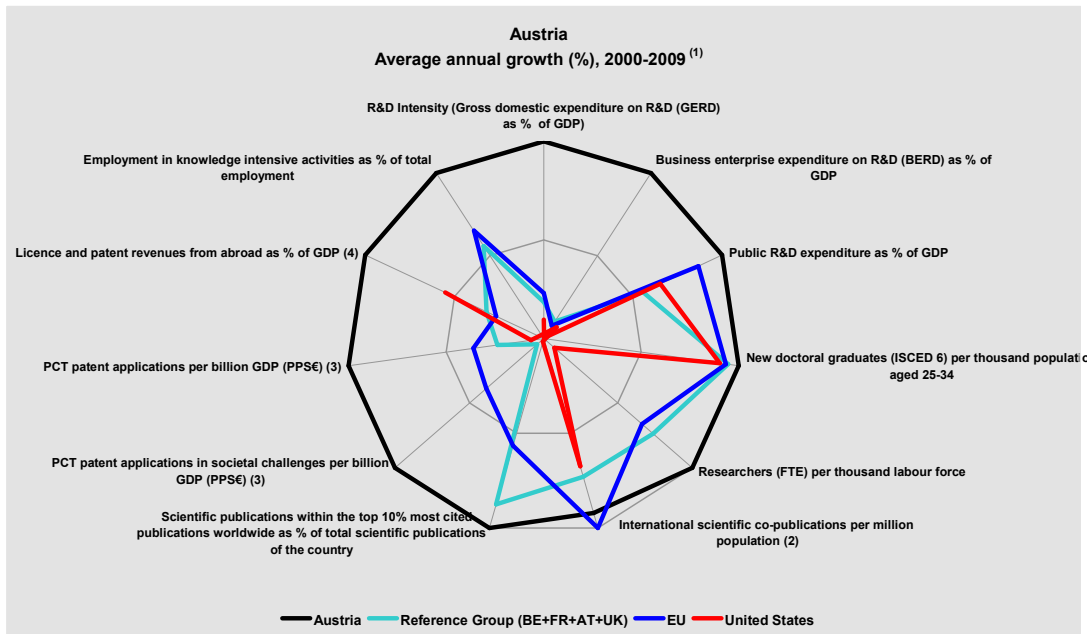
(4) (i) EU does not include BG, CY, LV, LT, MT, RO; (ii) EU refers to extra-EU.

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

Innovation Union Competitiveness report 2011

## Overall review of EU Member States and Associated countries

From a dynamic perspective, in the last decade, Austria has significantly improved its scientific and technological competitiveness in virtually all dimensions, largely outperforming the EU or other similar research systems.



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

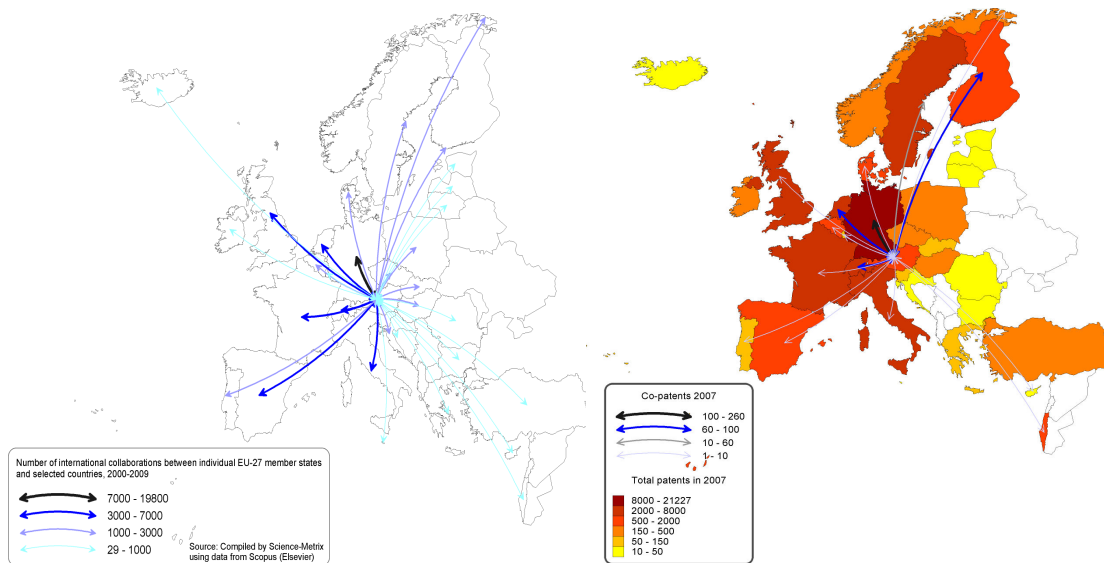
Austria is a rather small but open research and innovation system which can benefit from strong knowledge spillovers, as evidenced by the large number of increasing international scientific co-publications. If the main scientific partner is Germany, due to its size and the linguistic and historical ties between the two countries, Austria has significant collaborations with a number European country.

In terms of co-invented patents, the main technological partner is once again Germany, but Switzerland, the Netherlands and Finland also rank high in the list. In case of higher Industry –University cooperation, a progress in co-patenting activity with countries such as France, Spain, the United Kingdom and Italy would allow to take better benefit from scientific cooperation existing with these latter countries.

The geographical, historical and cultural factors that reflect in the industrial ties influence the technological cooperation pattern.

### Co-publications between Austria and European countries in 2000-2009

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



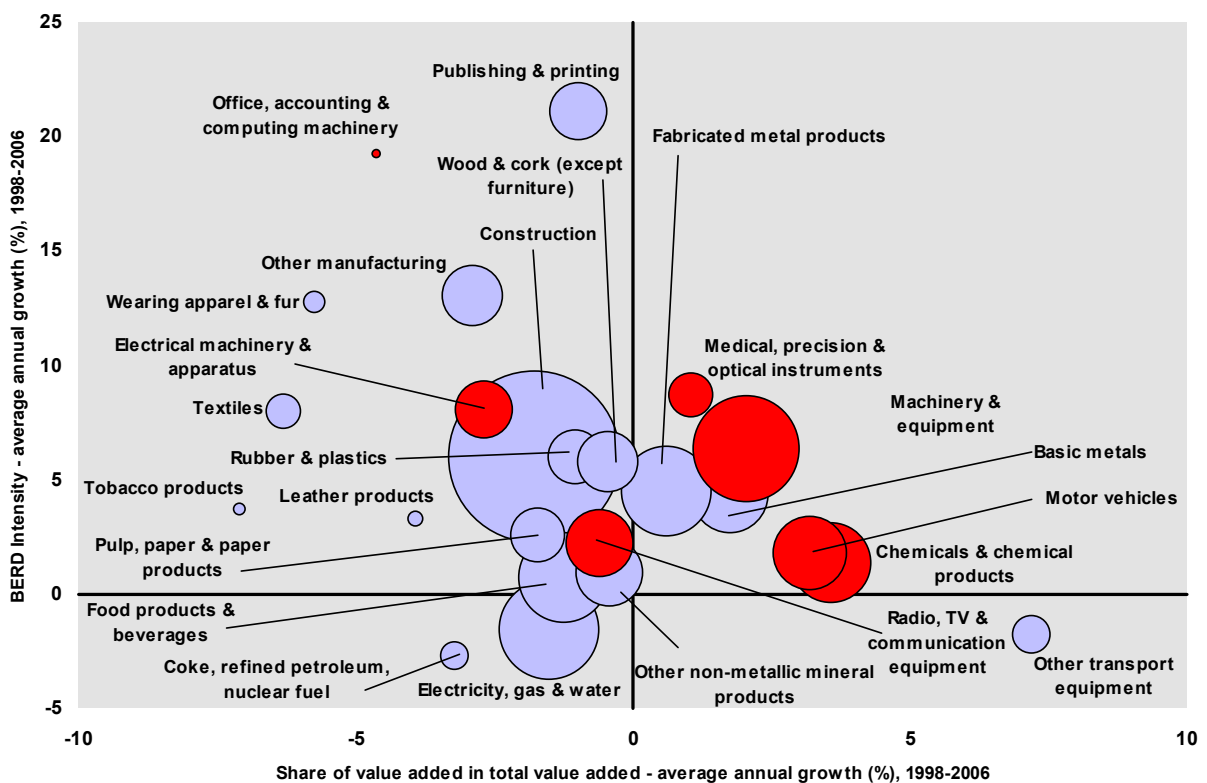
Source: DG Research and Innovation  
Data: Scopus/ Science Metrix and Eurostat

### Structural change towards a more knowledge-intensive economy

As mentioned earlier, private R&D intensity grew in Austria in the last decade in almost all sectors. To a large extent, this increase can be traced back to two main sources: (1) an increase of the importance of some medium-high and high tech sectors such as motor vehicles and chemicals and chemical products, on the overall Austrian economy, and (2) an increase in the research intensity, i.e. R&D investment as a percentage of total value added, of some key medium-high tech and high tech sectors such as electric machinery and apparatus, medical precision and optical instruments or machinery equipment. Despite this progress, the average R&D intensity of most Austrian manufacturing sectors remain similar to Germany, but slightly below leading countries such as Sweden or France<sup>1</sup>.

As a result, the Austrian manufacturing sector may find new opportunities to move even further towards higher research-intensive, more value added products in the global added value chain of some specific sectors.

**Figure 1.12 Austria - Share of value added versus BERD Intensity - average annual growth, 1998-2006**



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) 'Recycling' is not included on the graph.

<sup>1</sup> Private R&D intensity, i.e.; R&D investment over total value added, in manufacturing in 2006 was of 6.83% in Austria, 7.54% in Germany, 10.05% in France and 13.23% in Sweden. (source: DG Research and Innovation)

## Overall review of EU Member States and Associated countries

### P7 Key facts and figures

#### Applications:

As of 2011/03/16, a total of

- 5.918 eligible proposals were submitted in response to 248 FP7 calls for proposals
- involving 8.080 applicants from Austria (3,03% of EU-27\*) and
- requesting EUR 2.613,05m of EC contribution (2,96% of EU-27\*)

**Nr. of Researchers as % of population Rank in EU-27*	N/A	0,40%
Innovation scoreboard (2008)	- 6th	
- Above EU-27 average		
- Innovation Follower		
Nr. of FP7 applicants (% EU-27*)	8.080	
(3,03%)	266.507	
Req. EC contribution by FP7 applicants in EUR million		
(% EU-27*)	2.613,05	
(2,96%)	88.295	

Among the EU-27\* Austria (AT) ranks:

- 10th in terms of number of applicants and
- 10th in terms of requested EC contribution

#### Success rates:

- The AT applicant success rate of 21,4% is similar to the EU-27\* applicant success rate of 21,6%.
- The AT EC financial contribution success rate of 20,4% is similar to the EU-27\* rate of 20,7%.

Nr. of successful FP7 applicants (% EU-27*)	1.733	
(2,93%)	59.199	
Req. EC contribution by successful FP7 applicants in EUR million		
(% EU-27*)	532,27	
(2,91%)	18.262,02	
Success rate FP7 applicants	21,4%	21,6%

Specifically, following evaluation and selection, a total of

- 1.286 proposals were retained for funding (21,7%)
- involving 1.733 (21,4%) successful applicants from Austria and
- requesting EUR 532,27m (20,4%) of EC financial contribution

Success rate	20,4%	20,7%
FP7 EC contribution		
Nr. of FP7 grant holders (% EU-27*)	1.477	
(2,88%)	51.279	
EC contribution to FP7 grant holders in EUR million		
(% EU-27*)	477,66	
(2,88%)	16.578,15	
Nr. of FP7 coordinators (% of grant holders)	291	
(19,70%)	9.383	
(18,30%)		

Among the EU-27\*, Austria (AT) ranks:

- 12th in terms of applicants success rate and
- 9th in terms of EC financial contribution success rate

#### Signed grant agreements

As of 2011/03/16, Austria (AT) participates in

- 1.087 signed grant agreements
- involving 13.517 participants of which 1.477 (10,93%) are from Austria
- benefiting from a total of EUR 3.920,46m of EC financial contribution of which EUR 477,66m (12,18%) is dedicated to participants from Austria.

Nr. of FP7 SME grant holders (% grant holders)	318	
(21,53%)	8.845	
(17,25%)		
EC contribution to FP7 SME grant holders in EUR million (% of grant holders)	89,66	
(18,77%)	2.207,73	
(13,32%)		

Among the EU-27\* in all FP7 signed grant agreements, Austria (AT) ranks:

- 10th in number of participations and
- 10th in budget share

#### SME performance and participation

- The AT SME applicant success rate of 18,48% is similar to the EU-27\* SME applicant success rate of 19,33%.
- The AT SME EC financial contribution success rate of 17,74% is similar to the corresponding EU-27\* rate of 18,26%.

Specifically,

- 2.673 AT SME applicants requesting EUR 742,45m
- 494 (18,48%) successful SMEs requesting EUR 131,70m (17,74%)

## Overall review of EU Member States and Associated countries

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

- 318 AT SME grant holders, i.e., 21,53% of total AT participation
- EUR 89,66m, i.e., 18,77% of total AT budget share

### Top 3 collaborative links with:

- DE - Germany (2.067)
- UK - United Kingdom (1.205)
- FR - France (1.109)

AT - Austria - 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	2.069	799,51	370	17,88 %	152,14	19,03 %
Marie-Curie Actions	950	n/a	226	23,79 %	n/a	n/a
Health	671	289,71	148	22,06 %	66,98	23,12 %
Environment (including Climate Change)	651	189,50	135	20,74 %	32,58	17,19 %
Research for the benefit of SMEs	641	88,75	105	16,38 %	14,61	16,46 %
Transport (including Aeronautics)	524	150,76	140	26,72 %	41,16	27,30 %

AT - Austria - most active FP7 research priority areas by EC contribution granted to the research projects				
FP7 Priority Area	Number of grant holders	% of all AT grant holders	EC contribution (EUR million)	% of total EC contribution to AT
Information and Communication Technologies	375	25,39%	141,26	29,57 %
ERC	45	3,05%	63,38	13,27 %
Health	136	9,21%	59,77	12,51 %
Marie-Curie Actions	184	12,46%	42,94	8,99 %
Transport (including Aeronautics)	116	7,85%	33,23	6,96 %
Nanosciences, Nanotechnologies, Materials and new Production Technologies - NMP	88	5,96%	28,44	5,95 %

AT - Austria - 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	3.274	901,54	662	20,22%	172,33	19,12%	582	217,19	45,47%
PRC	2.167	635,72	465	21,46%	142,68	22,44%	441	137,86	28,86%
REC	1.534	493,23	340	22,16%	106,00	21,49%	324	101,83	21,32%
OTH	522	117,38	94	18,01%	21,99	18,74%	40	5,22	1,09%
PUB	342	73,32	132	38,60%	18,67	25,46%	90	15,56	3,26%

SME	2.673	742,45	494	18,48%	131,70	17,74%	318	89,66	18,77%
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HES - Higher or secondary education, PRC - Private for profit (excl. education), REC - Research organisations, OTH - Others, PUB - Public body (excl. research and education),

AT - Austria - the most active NUTS3 regions, by EC contribution granted to the FP7 research projects				
AT - Austria region	Number of	% of all AT - Austria	EC contribution	% of total EC



## Overall review of EU Member States and Associated countries

	grant holders	grant holders	(M euro)	contribution to AT
Wien (AT130)	768	52,00%	239,35	50,11%
Graz (AT221)	206	13,95%	81,44	17,05%
Innsbruck (AT332)	97	6,57%	42,52	8,90%
Linz-Wels (AT312)	74	5,01%	17,84	3,73%
Wiener Umland/SoWi-Teil (AT127)	49	3,32%	14,36	3,01%

AT - Austria - most active organisations in terms of EC contribution granted to the FP7 research projects				
Legal Name	Number of Participations	% of all AT grant holders	EC contribution (M euro)	% of total EC contribution to AT grant holders
TECHNISCHE UNIVERSITAET WIEN (TU WIEN)	100	6,77%	34,95	7,32%
UNIVERSITAET WIEN (UNIVIE)	81	5,48%	31,79	6,66%
UNIVERSITAET INNSBRUCK (UIBK)	50	3,39%	25,46	5,33%
TECHNISCHE UNIVERSITAET GRAZ (TU Graz)	64	4,33%	25,43	5,32%
MEDIZINISCHE UNIVERSITAET WIEN	52	3,52%	23,46	4,91%

**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](#)