The ERC: Where do we stand and what are the perspectives for the future?

European Research Council

Prof. Helga Nowotny
ERC President

October 2010

Nobel Prize in Physics goes to European Research Council grantee Prof. Konstantin Novoselov from Manchester University

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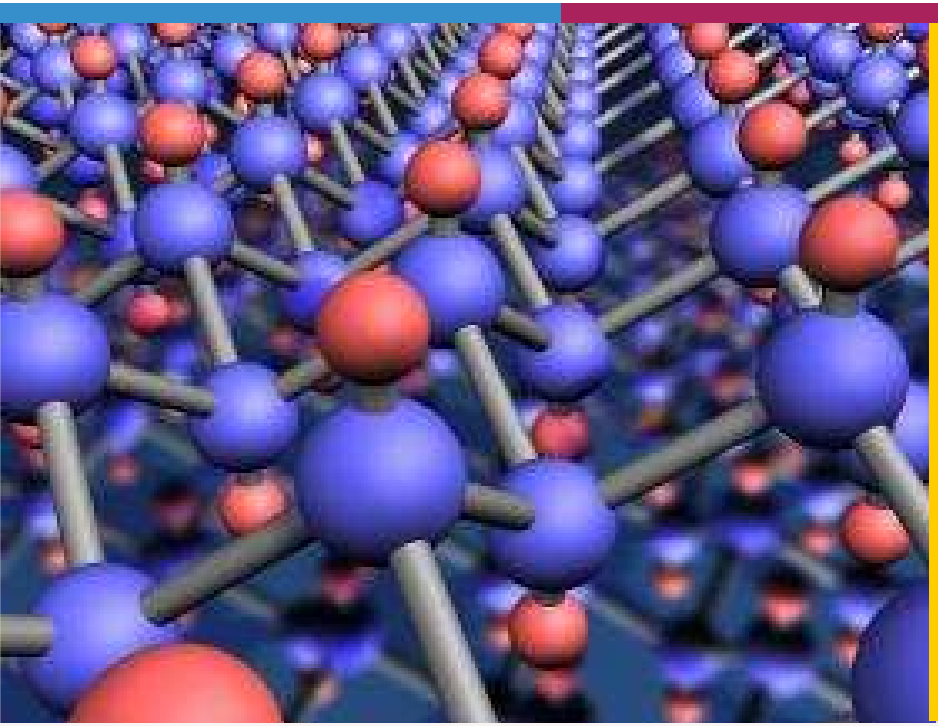


One-atom-thick sheets of carbon have been on the scene for just six years but have already drawn a wealth of research Interest

Novoselov was a postdoctoral associate working with Andre Geim in 2004 when the researchers discovered they could make atomically thin slabs of carbon by repeatedly cleaving graphite —essentially pencil lead—with adhesive tape.

What is the ERC?

ERC is a new type of funding body in Europe to support excellence in frontier research, a bottom-up, individual-team, pan-European competition

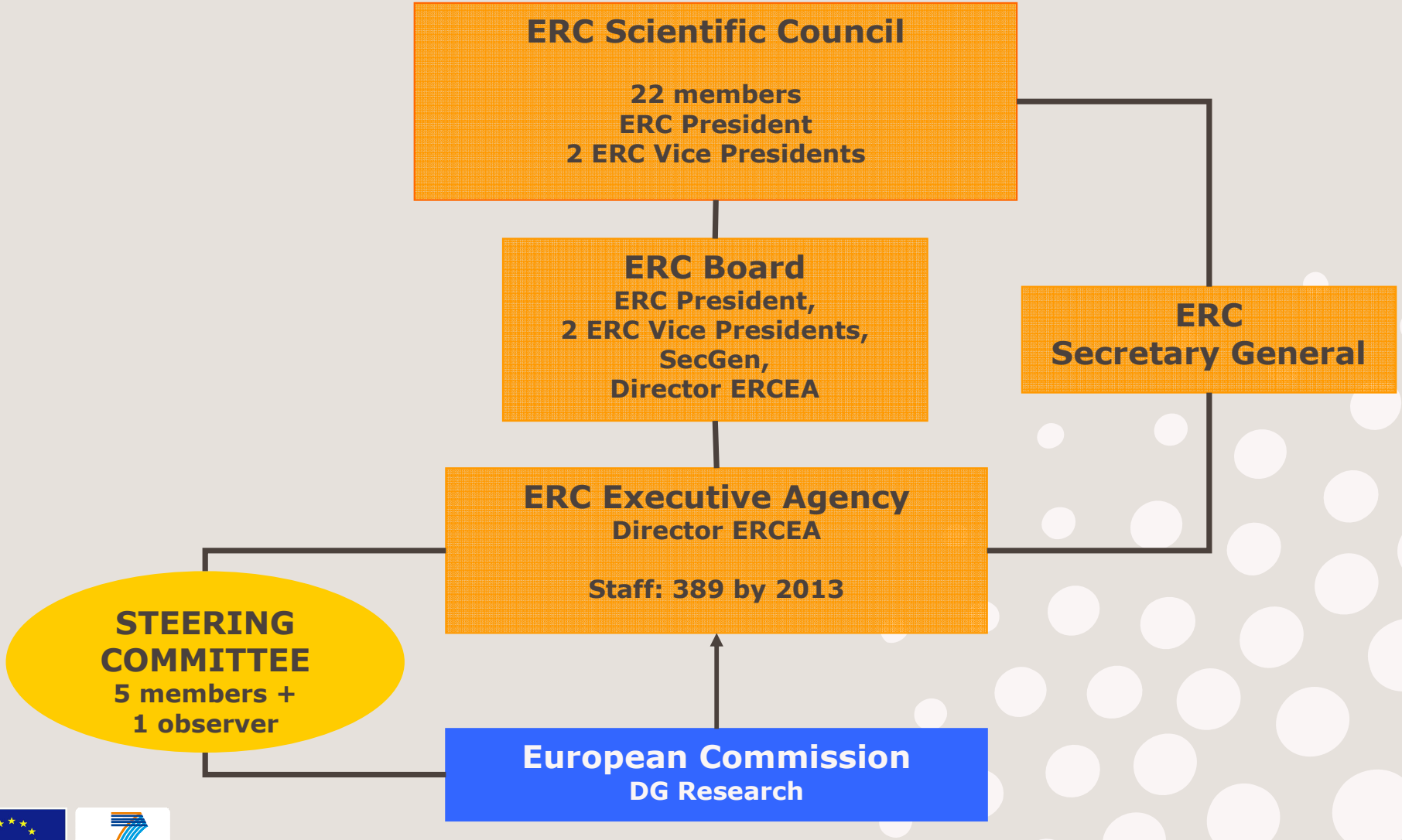
Legislation

- Scientific Council with 22 members
- Support by the ERC Executive Agency
- Significant budget (1.1 billion €/year)
- Excellence as the only valid criterion

Strategy

- Support for the individual scientist – no networks!
- International peer-review
- No predetermined subjects (bottom-up)
- Support of frontier research in all fields of science and humanities

ERC Structure



The ERC paradigm

- A radical shift in policy: pan-European competition to advance excellent ideas of individuals
- Support for excellent individual researchers to push the frontiers of science
- Support for the early independence of young researchers
- Industry participation is welcome (frontier technologies)
- Make ERA attractive as scientific work place

The first years of ERC life

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- Infancy – “Teething problems”
  - ➔ Transition to EA
- Adolescence – Becoming autonomous
  - ➔ Scientific vs. administrative cultures (trust vs. control)
- Early adulthood – Need for consolidation
  - ➔ Finalising possible options for future governance structure
  - ➔ Budgetary stability at a significant higher level (at least doubling of ERC budget in 2013, i.e. 1.7 billion)

Essential Experiences and contributions

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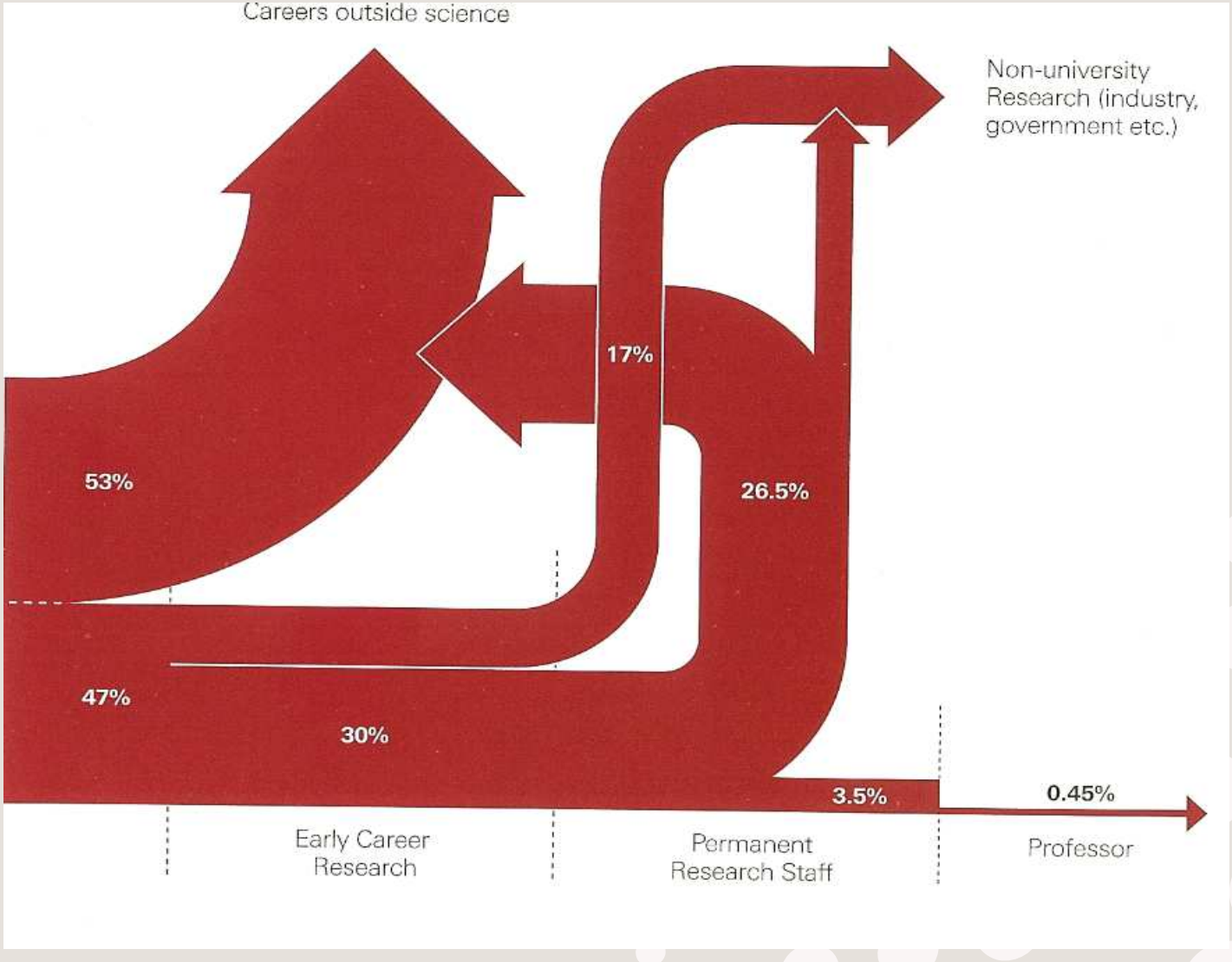
Essentials:

- Bottom-up approach, individual teams, excellence only
- ERC evaluation system aiming to become “gold standard” (panel members appointed by ScC, high degree of internationalization)
- Simplicity makes management of a large amount of individual projects possible and traceable
- EU-added value: leverage effect on universities and national funding agencies

The Royal Society, 2010
The Scientific Century



Currently our granting schemes support 2 critical stages in scientific careers

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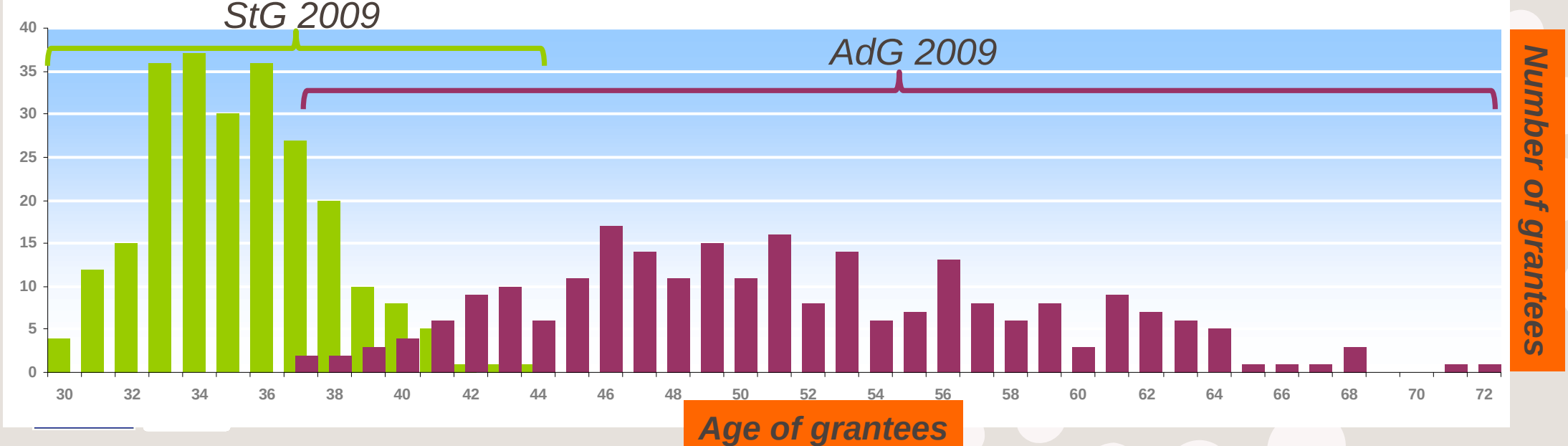
Starting Grants

- Attract/retain **next-generation leaders**
- Address **funding gap** early in independent career
- Establish independent **research team & program**
- up to € 2.0 Mio for 5 years

Advanced Grants

- Attract/retain **current world-**leaders
- Stimulate investigator-driven, **breakthrough research**
- up to € 3.5 Mio for 5 years



The ERC' contribution to EU Innovation Union 2020

From blue sky research towards innovation

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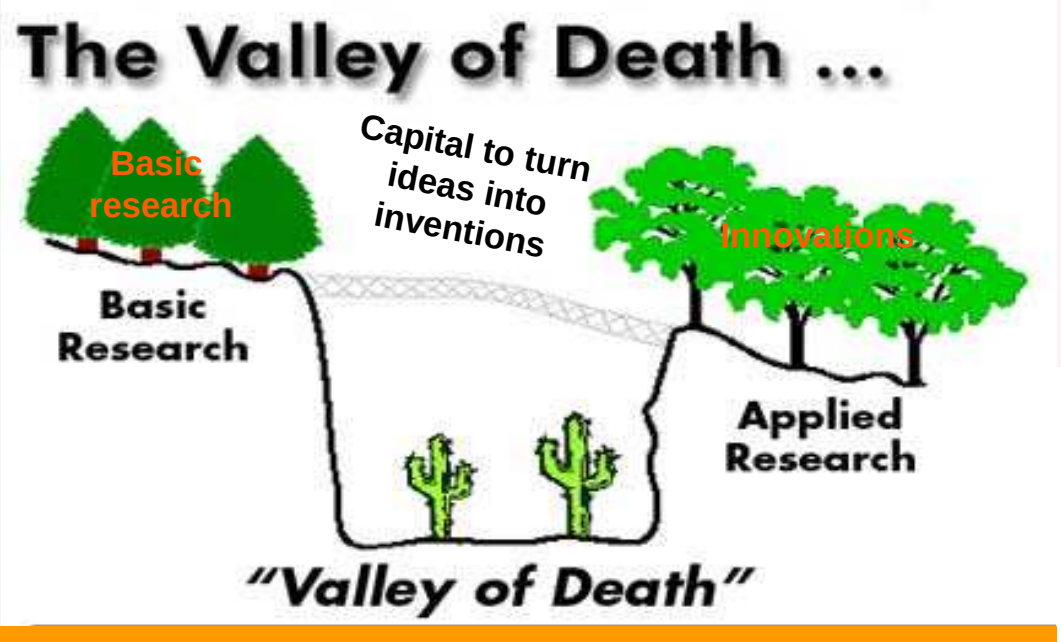
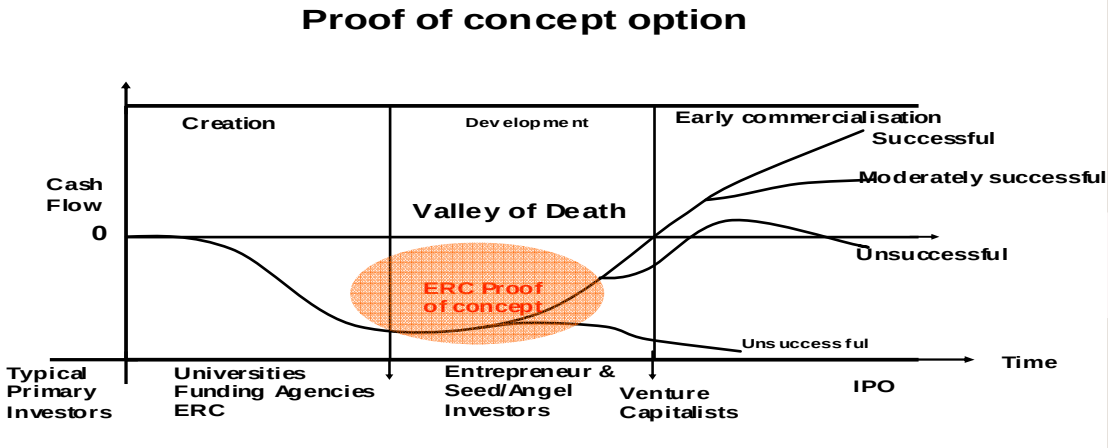
Bridging the innovation gap



The ERC Proof of Concept

Fundamental research often generates unexpected or new opportunities for commercial application
Useful ERC-funded excellent ideas should not miss these opportunities!



Excellence only!
ERC Grant Schemes
Peer Review Evaluation Panels

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Panel Members are appointed by the ERC Scientific Council

- **25 Panels** covering all fields of science, technology and scholarship
- **2 sets of Panels**: StG Panels, AdG Panels
- Each Panel consists of the **Panel Chair** and **10-15 Panel Members**
- Panel Chair **oversees evaluation process** for the proposals assigned to his/her panel in collaboration with the ERC staff
- The Panel Chair gives high level **credibility** stamp and **visibility** to the whole evaluation process

ERC Grants:
Submission, evaluation and selection

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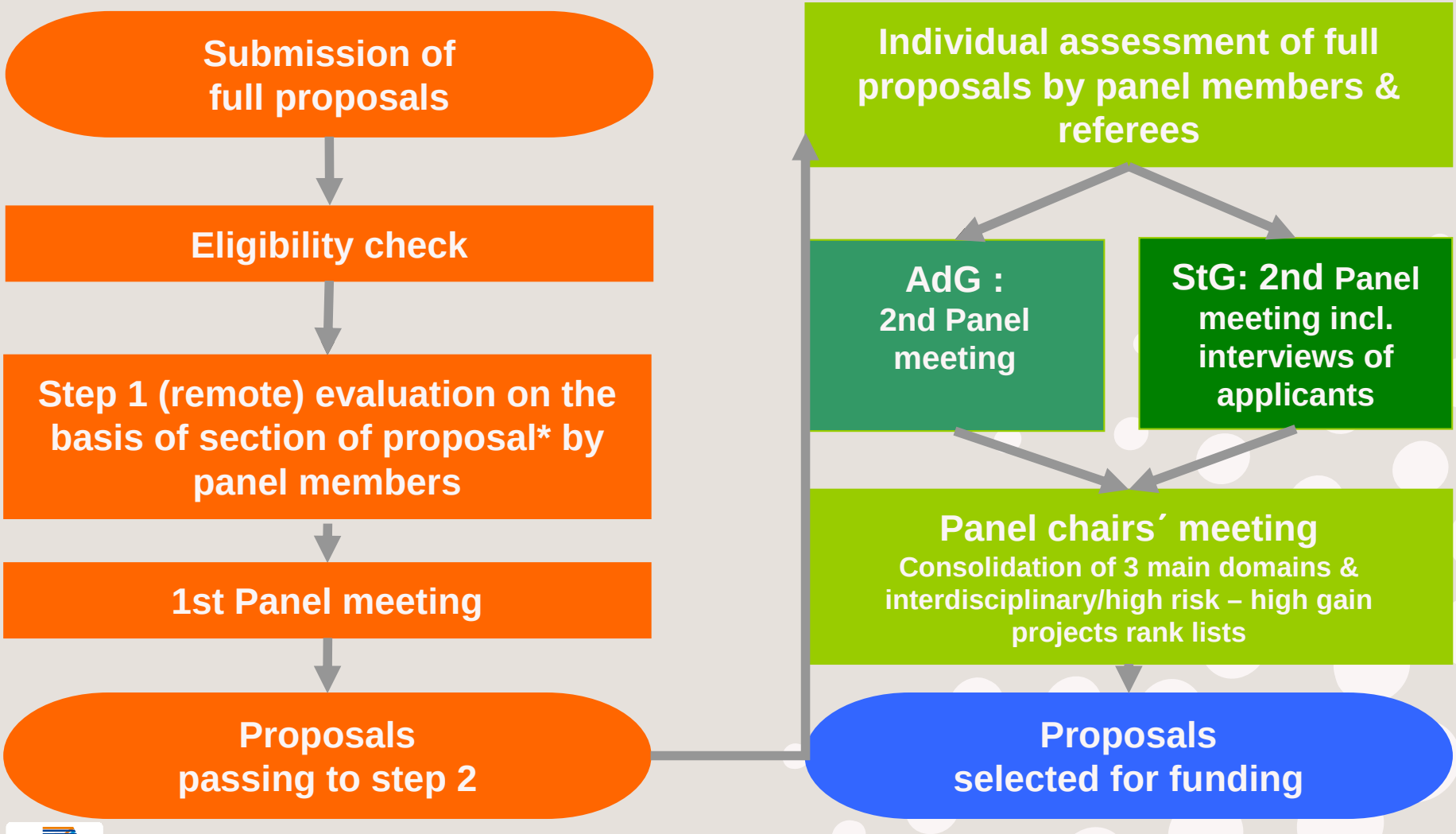

* Profile of PI, projects extended synopsis

ERC Starting & Advanced grant calls

Panel Members

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NATIONALITY	Panel Chairs	Panel Members	Total	Share in %
AT	1	35	36	2,4%
AU		**5**	**5**	**0,3%**
BE		53	53	3,6%
BG		2	2	0,1%
CA	**2**	**6**	**8**	**0,5%**
CH	3	39	42	2,8%
CR		**3**	**3**	**0,2%**
CY		4	4	0,3%
CZ		28	28	1,9%
DE	17	171	188	12,6%
DK	5	31	36	2,4%
EE		2	2	0,1%
EL	1	25	26	1,7%
ES	3	64	67	4,5%
FI	10	31	41	2,8%
FR	14	138	152	10,2%
GI		**1**	**1**	**0,1%**
HK		**3**	**3**	**0,2%**
HR		3	3	0,2%
HU		39	39	2,6%
IE		13	13	0,9%
IL		27	27	1,8%

NATIONALITY	Panel Chairs	Panel Members	Total	Share in %
IN		**3**	**3**	**0,2%**
IS		1	1	0,1%
IT	15	117	132	8,9%
JP		**14**	**14**	**0,9%**
LT		3	3	0,2%
MX		2	2	0,1%
NE		2	2	0,1%
NL	9	49	58	3,9%
NO	4	16	20	1,3%
PL	4	36	40	2,7%
PT	2	23	25	1,7%
RO		7	7	0,5%
RS		2	2	0,1%
RU		**4**	**4**	**0,3%**
SE	4	55	59	4,0%
SK		3	3	0,2%
SL		1	1	0,1%
SN		1	1	0,1%
TR		14	14	0,9%
TW		**1**	**1**	**0,1%**
UK	12	171	183	12,3%
US	**12**	**122**	**134**	**9,0%**
Total	**118**	**1370**	**1488**	**100,0%**

ERC Starting & Advanced grant calls 2007 - 2010

Submitted proposals by domain

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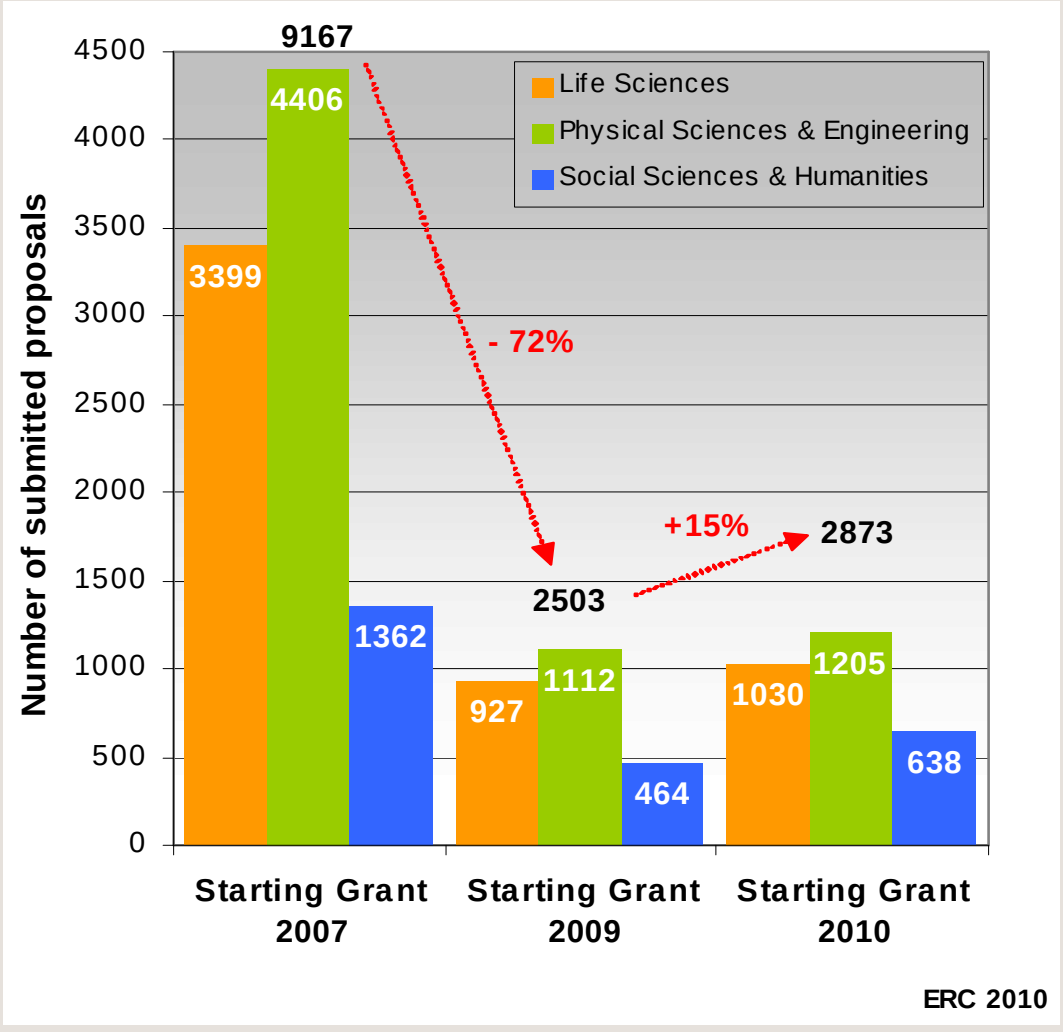
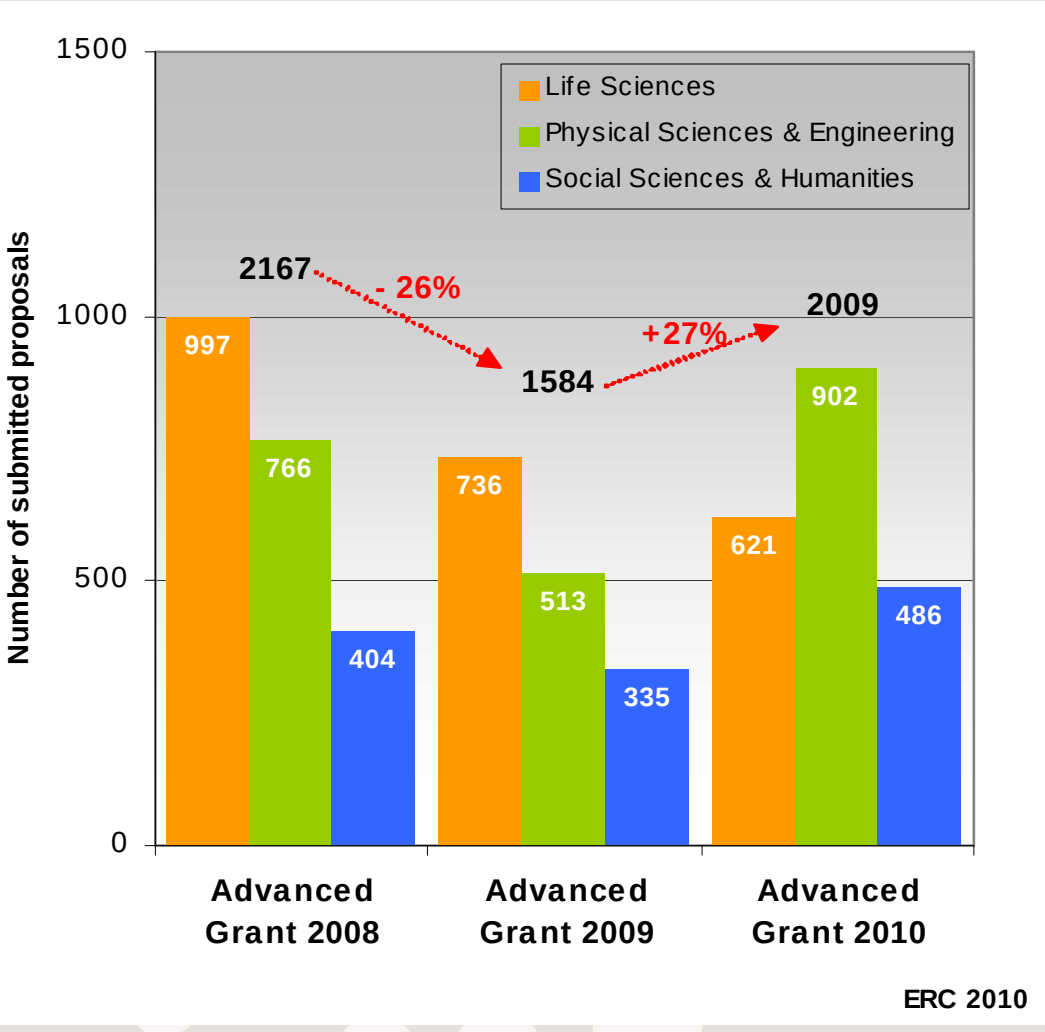
Starting Grant Calls



ERC 2010

Advanced Grant Calls



ERC 2010

Starting grants 2007 - 2010
Advanced grants 2008 - 2009
Success rates per domain
Relation of submissions and selected proposals

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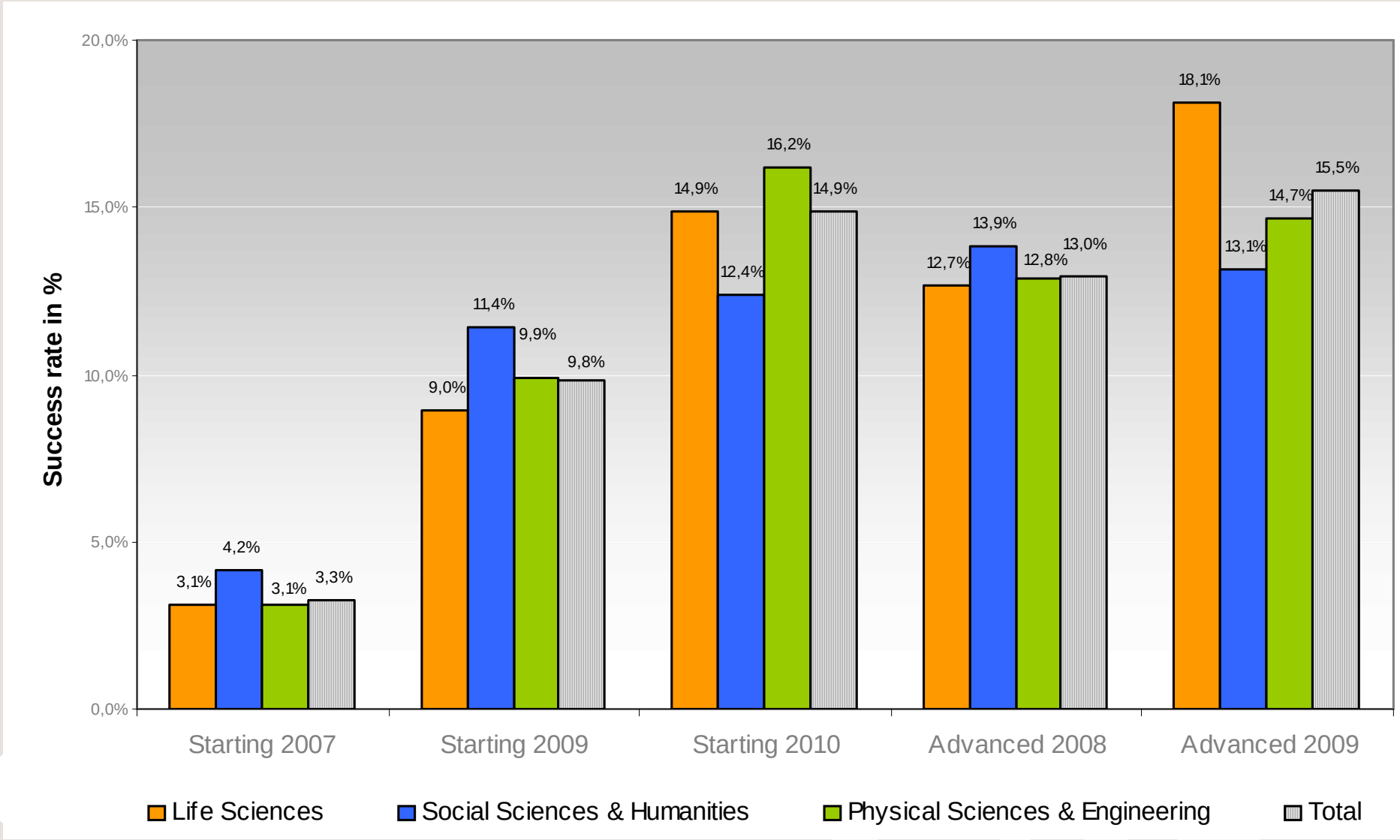

Starting grants 2007 - 2010
Advanced grants 2008 - 2009
Women participation

in % of submissions and selected proposals

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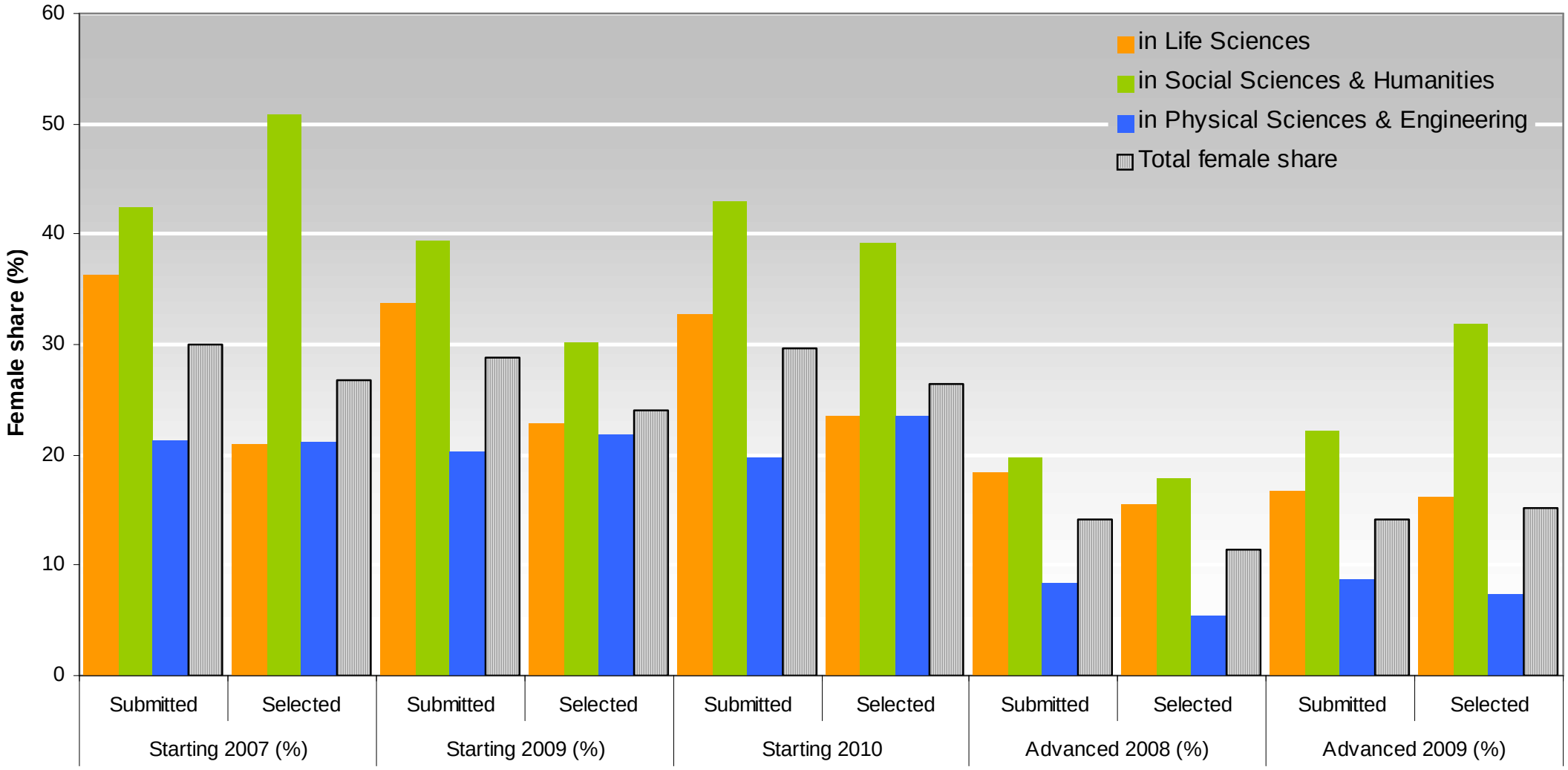
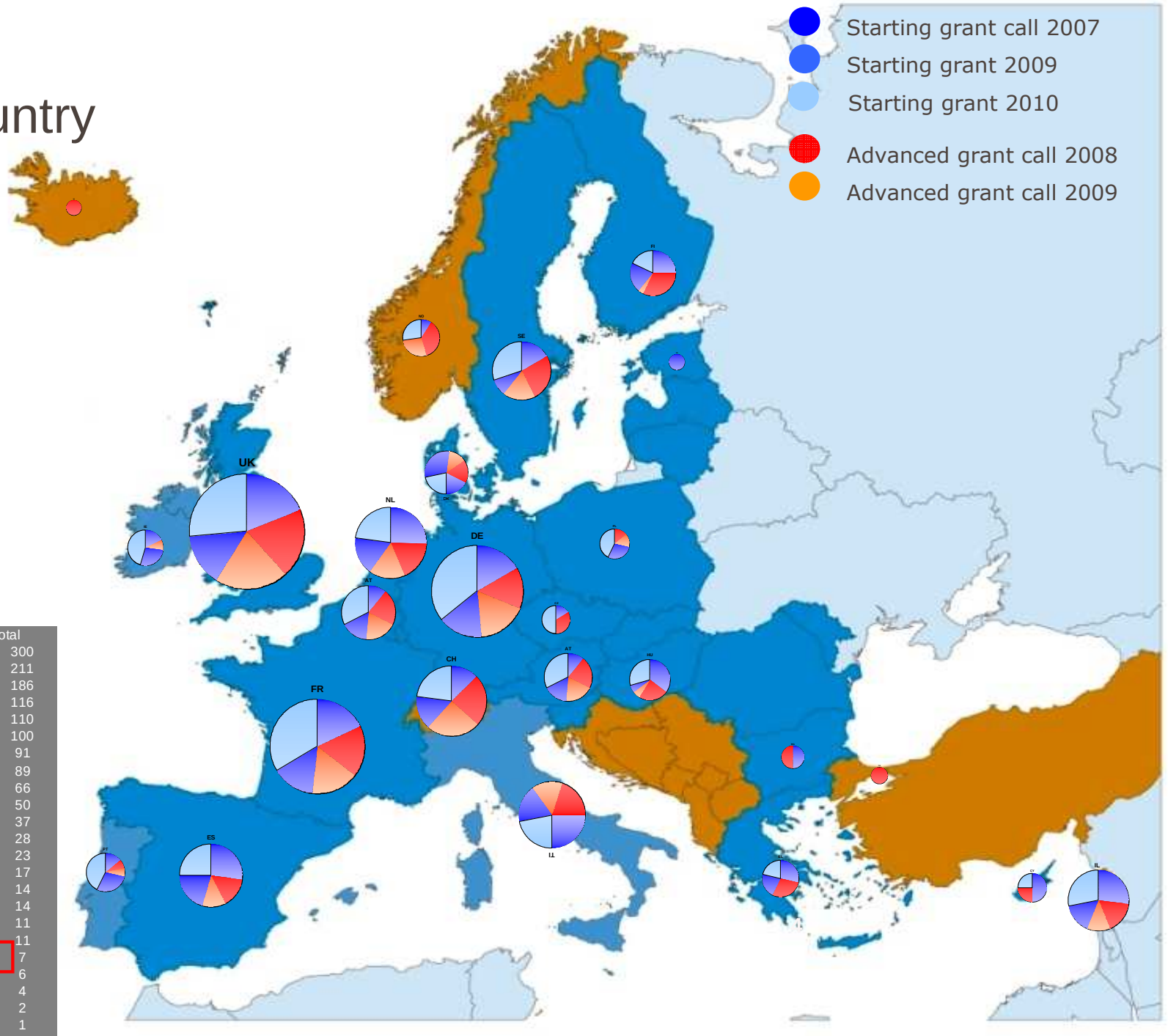


StG 2007 - 2010
AdG 2008 - 2009
Grants by host country



	StG 2007	ERC-2008-	ERC-2009-	ERC-2009-	ERC-2010-	Total
UK	57	58	62	44	79	300
FR	38	37	34	31	71	211
DE	31	27	33	28	67	186
CH	15	28	29	17	27	116
NL	28	20	18	19	25	110
IT	25	20	15	18	22	100
ES	25	14	11	18	23	91
IL	24	15	11	14	25	89
SE	11	17	12	6	20	66
BE	11	5	2	15	17	50
AT	4	8	7	6	12	37
FI	7	9	1	6	5	28
DK	4	4	3	7	5	23
HU	6	4	1	1	5	17
PT	2	1	1	4	6	14
EL	4	4		3	3	14
NO	1	4	3		3	11
IE	2		1	3	5	11
PL	0	1	1	2	3	7
CZ	1	2			3	6
CY	2	1			1	4
BG	1	1				2
EE	0			1		1
IS	0	1				1
TR	0	1				1
	299	282	245	243	427	1496

StG 2007 - 2010
AdG 2008 - 2009

Grants by country of host institution

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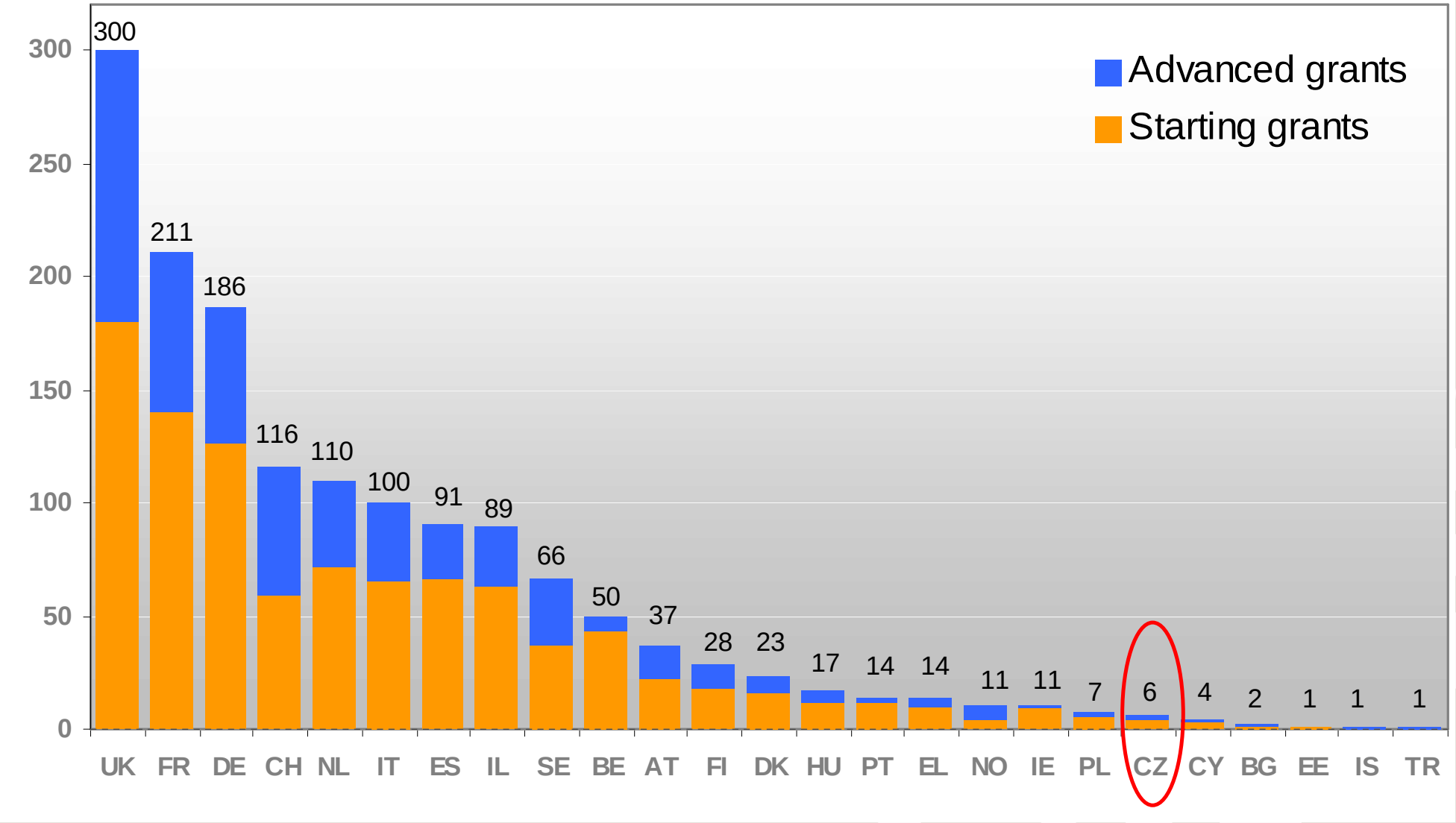

StG 2007 - 2010
AdG 2008 - 2009

Grants by nationality of grantee

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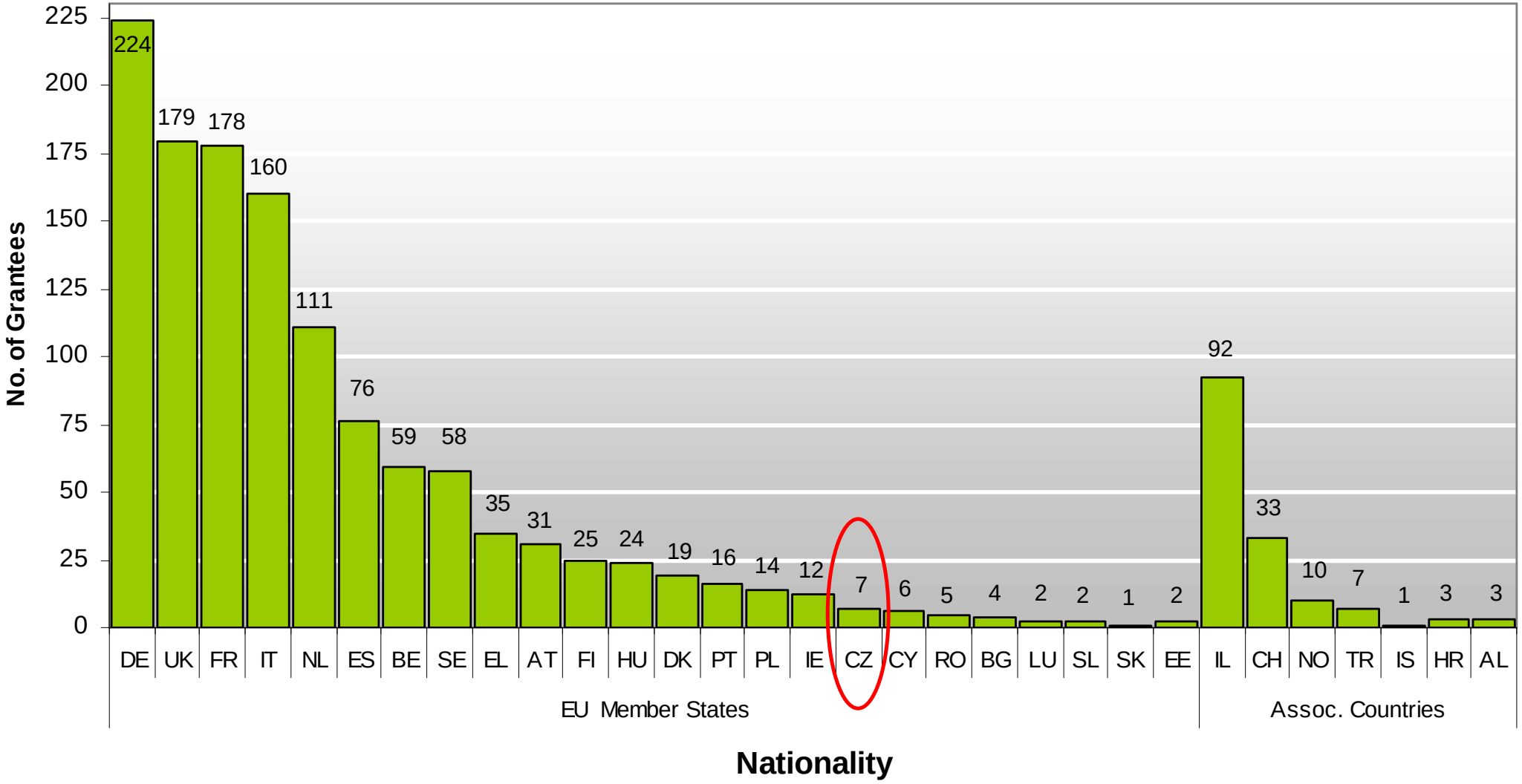

Disparate national policies:
A major challenge
Variable R&D intensity (as % of GDP)

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Europe (ERA) must be competitive as a continent, but also as individual member states

high

Israel (4.71% of GDP)
Sweden (3.86%)
Finland (3.43%)
Switzerland (2.93%)
Iceland (2.83%)
Germany (2.51%)
Austria (2.43%)
Denmark (2.44%)
France (2.13%)

medium

Belgium (1.82%)
Netherlands (1.78%)
UK (1.76%)
Luxembourg (1.56%)
Norway (1.51%)
Czech Rep (1.42%)
Ireland (1.25%)
Slovenia (1.22%)
Spain (1.12%)
Italy (1.10%)

(2005 data)

R&D intensity:
10-fold differences
within ERA

Hungary (0.94%)
Portugal (0.80%)
Lithuania (0.76%)
Turkey (0.67%)
Greece (0.61%)
Malta (0.60%)
Latvia (0.57%)
Poland (0.57%)
Slovakia (0.51%).
Bulgaria (0.48%)
Cyprus (0.40%)
Romania (0.39%)

low

Meanwhile…
Japan 3.17%
Korea 2.99%
USA 2.67%
EU 1.84%
China 1.4%

China to overtake the EU in 2009!

What can be done
Now and in the future

- **Universities and research institutions:**
  - Active search and encouragement especially of potential StG applicants
- **Government and Funding organizations:**
  - Possible funding of semi-finalists in StG calls
  - Creating creative environments: set up at least one excellent institution to retain, repatriate and regenerate scientific talent
  - Discuss and urge possible “bridging schemes”
- **Other ideas?**