EUROPEAN PARLIAMENT

# EUROPEAN FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

## HORIZON 2020
## (2014-2020)

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## EUFEPS Executive Committee

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# Content of Presentation

- The Place of the EU in a Multipolar World of S&T
- Europe 2020
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# THE PLACE OF THE EU IN A MULTIPOLAR WORLD OF S&T

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# THE PLACE OF EU IN A MULTI POLAR WORLD OF S&T

**According to the STC key figures report 2008/2009:**

**80% of researchers work outside the EU**

**75% of GERD is executed in other parts of the world**

**69% of patent applications are made outside the EU**

**EU`s world share in GERD has diminished by 7.6% over the previous 6 years**

**EU`s world share of patent application has declined 14.2% over the previous 6 years**

**While the ratio of the world share of patent applications/world share of GERD declined in the EU by 7%, it increased in the emerging economies of Asia by 53%**

**Conclusion: Asian economies have increased their patents even more rapidly**

**than their investments in research when compared with the EU**

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# THE PLACE OF EU IN A MULTI POLAR WORLD OF S&T- FUNDING

**EU is lagging behind the US, Japan and South Korea in terms of overall R&D intensity, due to the lower level of R&D funded and performed by the business sector**

| 2006 | 2000 |
|---|---|
| JAPAN TOTAL 3.39 PRIVATE 2.62 | JAPAN TOTAL 3.04 PRIVATE 2.20 |
| S. KOREA TOTAL 3.23 PRIVATE 2.43 | S. KOREA TOTAL 2.39 PRIVATE 1.73 |
| US TOTAL 2.61 PRIVATE 1.69 | US TOTAL 2.73 PRIVATE 1.90 |
| EU-27 TOTAL 1.83 PRIVATE 1.00 | EU-27 TOTAL 1.86 PRIVATE 1.05 |
| CHINA TOTAL 1.42 PRIVATE 0.98 | CHINA TOTAL 0.90 PRIVATE 0.52 |

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# THE PLACE OF EU IN A MULTI POLAR WORLD OF S&T- RESEARCHERS

**Since 2000 China has doubled its number of researchers and the number of researchers has grown twice as fast in the EU as in the US and Japan**

**2006**

**EU-27 1.33 million researchers**

**US TOTAL 1.39 million researchers**

**CHINA 1.22 million researchers**

**A sizeable increase in the number of researchers was observed between 2000 to 2006 – in China 9.9% per annum and in South Korea 10.5% per annum – when compared to EU-27 3.1% per annum, Japan 1.5 % per annum and US 1.5% per annum.**

# THE PLACE OF EU IN A MULTI POLAR WORLD OF S&T- PUBLICATIONS

**In 2006, EU-27 remained the largest producer of scientific publications in the world (EU 37% US 31%).**

**However the EU contributes less than the US to high impact publications (US 1.45% EU 0.97% - contribution to the 10% most cited publications)**

**China`s share of world scientific publications has more than doubled within six years and is now larger than that of the Japanese**

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# THE PLACE OF EU IN A MULTI POLAR WORLD OF S&T- INDUSTRIAL RESEARCH

**According to the 2009 EU Industrial R&D investment Scoreboard:**

**Among the top 50 R&D investors, the EU and the US account respectively for 16 and 18 companies ( for both, 2 less than the previous year) and Japan for 13 (4 more than the previous year)**

**In the list of top 10 R&D investors, Toyota Motors took the first place. The US still has five companies ( Microsoft, General Motors, Pfizer, Johnson & Johnson and Ford Motors). The EU has two companies Volkswagen and Nokia. The other two companies are from Switzerland: Roche and Novartis.**

**The companies in the EU top 50 are mainly from the Automotive (11), Pharmaceuticals (7) and IT-sectors (7) while the non-EU top 50 are mainly IT-related (20) or in the Pharmaceuticals and Biotechnology (13) sectors**

**Companies in the energy field also saw a sharp rise in R&D.**

**Companies based in emerging economies continued to show the highest R&D growth, led by China with a 40% increase, India 27.3%, Taiwan 25.1% and Brazil 18.6%.**

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# THE S&T PANORAMA IN THE DIFFERENT M.S.- INDUSTRIAL RESEARCH

**In the Top 10 Companies by R&D investment , the profile of companies varies across the M.S.**

**Germany = automotive and chemical industry**
**Finland = telecommunications**
**Denmark = energy**
**France = automotive, telecommunications, energy**
**Sweden = automotive, telecommunications, energy**
**Netherlands = aerospace, electronics**
**UK = pharmaceutical, telecommunications, chemical industry, energy**
**Spain = telecommunications, energy, automotive**
**Portugal = banking, construction, biotechnology, energy**

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# THE IMPORTANCE OF THE EUROPEAN RESEARCH PROGRAMMES

**The current European Framework Programme of research and development, with 52 Million Euros of funding, has an enormous strategic importance for the development of innovation, competitiveness and therefore employment of the European area.**

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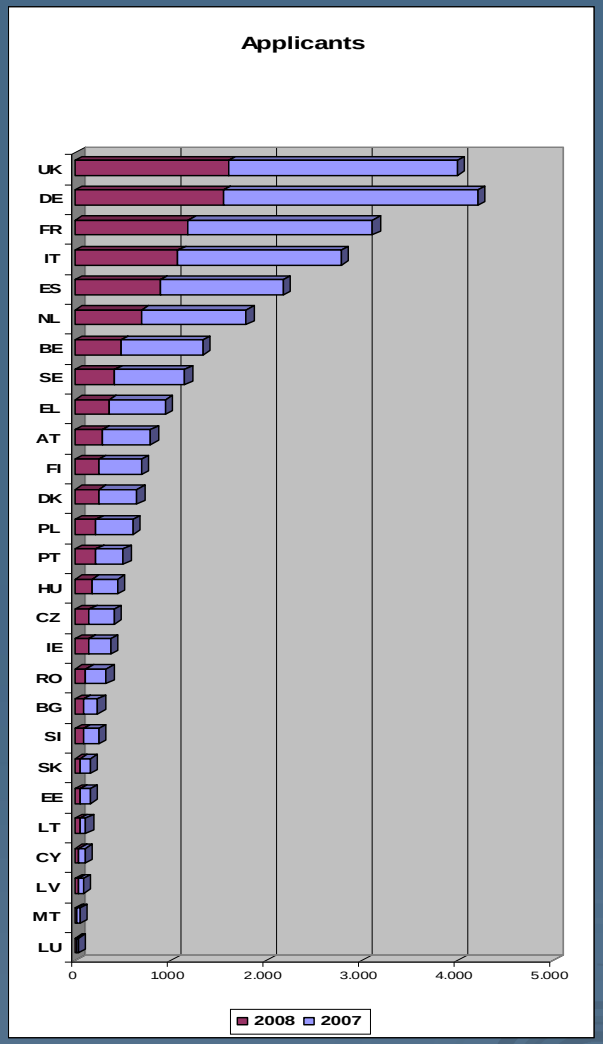
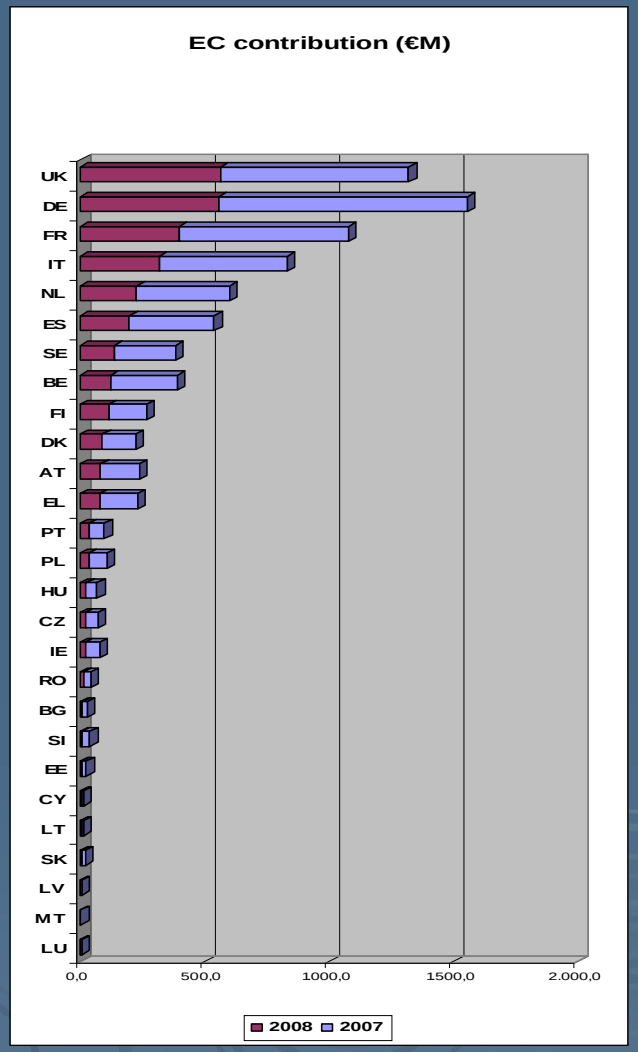
# THE PARTICIPATION OF THE DIFFERENT M.S. IN THE EUROPEAN RESEARCH PROGRAMMES



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# The importance of present moment

- European Budget and European Financing Programmes – 7 years cicles. Next cicle: 2014-2020
- European Commission, Council and Parliament are negotiating the Budget post 2013 and the future Framework programme: Horizon 2020
- Europe is facing great challenges: climate changes, ageing, Food security, security of energy suppy, etc
- Research and innovation are in the heart of the Strategy Europe 2020

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# EUROPE 2020

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# EUROPE 2020

## Strategy Europe 2020:

**Europe 2020 is the EU's growth strategy for the coming decade.**
**In a changing world, we want the EU to become a smart, sustainable and inclusive economy. These three mutually reinforcing priorities should help the EU and the Member States deliver high levels of employment, productivity and social cohesion.**

**Concretely, the Union has set five ambitious objectives to be reached by 2020:**

1. **Employment**
   - 75% of the 20-64 year-olds to be employed
2. **R&D / innovation**
   - 3% of the EU's GDP (public and private combined) to be invested in R&D/innovation
3. **Climate change / energy**
   - **greenhouse gas emissions 20%** (or even **30%**, if the conditions are right) **lower than 1990**
   - **20% of energy from renewables**
   - **20% increase in energy efficiency**
4. **Education**
   - **Reducing school drop-out rates below 10%**
   - **at least 40% of 30-34–year-olds completing third level education**
5. **Poverty / social exclusion**
   - at least **20 million fewer people in or at risk of poverty and social exclusion**

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# EUROPE 2020

## 7 flagship initiatives

- **Smart growth**
  - Digital agenda for Europe
  - Innovation Union
  - Youth on the move
- **Sustainable gowth**
  - **Resource efficient Europe**
  - **Na industrial policy for the globalisation era**
- **Inclusive growth**
  - **An agenda for new skills and jobs**
  - **European platform against poverty**

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# HORIZON 2020

## The EU Framework Programme for Research and Innovation (2014-2020)

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# Horizon 2020 Principles

**5 key principles:**

1. **A Trust based funding system**
2. **A chain from frontier research, to technological development, demonstration, valorisation of results and innovation**
3. **Simplification**
4. **Excellence based criteria for the FP in co-ordination with the structural funds for research capacity building: "Stairway to Excellence"**
5. **Employment of young researchers**

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# Horizon 2020 Financing

- European Parlamento adopted an amendment to doubling of the Budget for the next European Programme for Research and Innovation (increase from €50 billion to €100 billion )
- European Commission proposed €87.740 billion
- Negotiations taking place between Parliament, Council and Commission

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# Horizon 2020
# Three priorities

- **Excellent science**
- **Industrial leadership**
- **Societal challenges**

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# Horizon 2020
# Excellent science

- **Excellent science proposed funding (million euro, 2014-20):**

| | |
|---|---|
| European Research Council | 13.268 |
| Future and Emerging Technologies | 3.100 |
| Marie Curie actions | 5.572 |
| Research infrastructures | 2.478 |

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# Horizon 2020
## Industrial leadership

- **Industrial leadership proposed funding (million euro, 2014-20):**

| | |
|---|---|
| **Leadership in enabling and industrial technologies** (ICT, nanotechnologies, materials, biotechnology, manufacturing, space) | 13.781 |
| Access to risk finance | 3.538 |
| Innovation in SMEs | 619 |

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# Horizon 2020
# Societal challenges

- **Societal challenges proposed funding (million euro, 2014-20):**

| | |
|---|---|
| Health, demographic change and wellbeing | 8.033 |
| Food security, sustainable agriculture, marine and maritime research & the bioeconomy | 4.152 |
| Secure, clean and efficient energy | 5.782 |
| Smart, green and integrated transports | 6.802 |
| Climate action, resource efficiency and raw materials | 3.160 |
| Inclusive, innovative and secure societies | 3.819 |

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# Horizon 2020
## Role of EIT and JRC

- **Three priorities to be supported by:**

| | |
|---|---|
| European Institute of Innovation and Technology (EIT) | 1.360 |
| Joint Research Centre (JRC) | 1.962 |

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# Synergies between the Framework Programme and the Structural Funds

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# Synergies between the FP and the SF

- **Greater synergy between Research Framework Programme and Structural Funds**

**(47 recommendations in the followring areas):**

A. **Develop strategies and strengthen governance in the area of "Research, Technological Development and Innovation" (RTDI)**

B. **Strengthen and develop RTDI Infrastructure and Human Resources**

C. **Develop RTDI Excellence**

D. **Develop R&D cooperation at European and international levels**

E. **Strengthen the exploitation and economic and social valorisation of R&D results**

F. **Improve communication and information**

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# SIMPLIFICATION

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# Simplification
# Rules for Participation

1. **A single set of rules**
   - Adapted for the whole research and innovation cycle
   - Covering all reasearch programmes and funding bodies
   - Aligned to the Financial Regulation, coherent with other new EU Programmes

2. **One project – one funding rate**
   - Maximum of 100% of direct costs (except for actions close to market (70% maximum)
   - Indirect eligible costs: a flat rate of 20% of direct eligible costs

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# Simplification
# Rules for Participation

3. **Simple evaluation criteria**
   - Excellence – Impact – Implementation (Excellence only, for the ERC)

4. **New forms of funding**
   - Aimed at innovation: pre-commercial procurement, inducement prizes, dedicated loan and equity instruments

5. **International participation**
   - Facilitated by better protecting EU interests

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# Simplification
# Rules for Participation

6. **Simpler rules for grants**
   - Broader acceptance of participants accounting practices for direct costs, flat rate for indirect costs, no time-sheets for personnel working full time on a project, possibility of output-based grants
7. **Fewer, better targeted controls and audits**
   - Lowests possible level of requirements for submission of audit certificates without undermining sound financial management
   - Audit strategy focused on risk and fraud prevention
8. **Improved rules on intellectual property**
   - Balance between legal security and flexibility
   - Tailor-made IPR provisions for new forms of funding
   - A new emphasis on open access to research publications

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# Simplification Summary

- Single set of simpler and more coherent participation rules
- New balance between trust and control
- Moving from several funding rates for different beneficiaries and activities to just two
- Replacing the four methods to calculate overhead or “indirect costs” with a single flat rate
- Major simplification under the forthcoming financial regulation
- Successful applicants to get working more quickly: reduction of average time to grant by 100 days (current average of around 350 days under FP7)

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# EUROPEAN RESEARCH AREA (ERA)

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# European Research Area

- ERA complemented by Horizon 2020
- Removes barriers, open to the world and with cooperation with third countries
- Single market for knowledge, research and innovation

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# Next Steps

**From 30/11: Parliament and Council negotiations on the basis of the Commission proposals**

**Ongoing: Parliament and Council negotiations on EU budget 2014-20 (including overall budget for Horizon 2020)**

**Mid 2012: Final calls under 7th Framework Programme for Research to bridge gap towards Horizon 2020**

**Mid 2013: Adoption of legislative acts by Parliament and Council on Horizon 2020**

**1/1/2014: Horizon 2020 starts; launch of first calls**

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# CONCLUSiONS

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# Conclusions Horizon 2020

- A balance between the scientific, industrial and societal pillars
- Simplification
- More synergies with structural funds
- New mechanism "stairway to excellence“
- A substantial increase of the budget for research and innovation: €80 billion
- A dedicated financial contribution to the EIT (from 300 million to 3 billion Euros)
- A substantial increase 77% of the budget for European Research Council

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# Conclusions

- EU research and innovation brings unique responses to address Europe's societal challenges whilst stimulating growth and jobs
- Doubling of the financiancing of Horizon 2020 and better synergies between he FP and Structural Funds
- Horizon 2020 – simplification, more trust, flexibility and excellence based criteria
- Parliament and Council negotiations on the basis of the Commission proposals to be adopted by the end of 2013
- Further analysis of the details, namely of the participation rules