Research & Development + Innovation in Industrial Technology

The way to Horizon 2020

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Key challenge: stabilise the financial and economic system while taking measures to create economic opportunities

1. **Smart & inclusive growth** (€491bn)
   - Education, Youth
   - Sport
   - Connecting Europe
   - Cohesion
   - Competitive Business SMEs

2. **Sustainable growth, natural resources** (€383bn)
3. **Security and citizenship** (€18.5bn)
4. **Global Europe** (€70bn)
5. **Administration** (€62.6bn)

**Total:** €1,025bn
Investment in R&D is part of the solution to exit from the economic crises.
What is Horizon 2020

- Commission proposal for a 80 billion euro research and innovation funding programme (2014-2020)

- A core part of Europe 2020, Innovation Union & European Research Area:
  - **Responding to the economic crisis** to invest in future jobs and growth
  - **Addressing people’s concerns** about their livelihoods, safety and environment
  - **Strengthening the EU’s global position** in research, innovation and technology
Active involvement of stakeholders

- **EU Presidencies:** Sweden (societal challenges-based approach), Spain (integration of research and innovation), Hungary (FP7 interim evaluation), Poland (widening participation), European Council conclusions from 4.2.2011 (Common Framework to bring together all EU research and innovation funding)

- **European Parliament** reports: Merkies (Innovation Union), Audy (FP7 evaluation), Matias (Horizon 2020) and Carvalho (simplification)

- Overwhelming response to the public consultation on Horizon 2020 (more than 2000 contributions)

- **Survey on administrative costs for participants in FP7**

- **25 workshops on the content** of Horizon 2020
What’s new

- **A single programme** bringing together three separate programmes/initiatives*
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges** facing EU society, e.g. health, clean energy and transport
- **Simplified access**, for all companies, universities, institutes in all EU countries and beyond.

*The 7th Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT)
Three priorities:

1. Excellent science
2. Industrial leadership
3. Societal challenges
Priority 1. Excellent science

Why:

- World class science is the foundation of tomorrow’s technologies, jobs and wellbeing

- Europe needs to develop, attract and retain research talent

- Researchers need access to the best infrastructures
## Proposed funding (million euro, 2014-2020)

<table>
<thead>
<tr>
<th>Category</th>
<th>Funding (million euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>European Research Council</strong></td>
<td>13,268</td>
</tr>
<tr>
<td>Frontier research by the best individual teams</td>
<td></td>
</tr>
<tr>
<td><strong>Future and Emerging Technologies</strong></td>
<td>3,100</td>
</tr>
<tr>
<td>Collaborative research to open new fields of innovation</td>
<td></td>
</tr>
<tr>
<td><strong>Marie Curie actions</strong></td>
<td>5,572</td>
</tr>
<tr>
<td>Opportunities for training and career development</td>
<td></td>
</tr>
<tr>
<td><strong>Research infrastructures</strong> (including e-infrastructure)</td>
<td>2,478</td>
</tr>
<tr>
<td>Ensuring access to world-class facilities</td>
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Priority 2. Industrial leadership

Why:

- Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors

- Europe needs to attract more private investment in research and innovation

- Europe needs more innovative SMEs to create growth and jobs
Proposed funding (million euro, 2014-20)

<table>
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<tr>
<th><strong>Leadership in enabling and industrial technologies</strong> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</th>
<th>13 781</th>
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</table>
| **Access to risk finance**  
Leveraging private finance and venture capital for research and innovation | 3 538 |
| **Innovation in SMEs**  
Fostering all forms of innovation in all types of SMEs | 619 complemented by 6 829 (expected 15% of societal challenges + LEIT) and 'Access to risk finance' with strong SME focus |
Priority 3. Societal challenges

Why:

- Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport etc) cannot be achieved without innovation
- Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities
- Promising solutions need to be tested, demonstrated and scaled up
Proposed funding (million euro, 2014-2020)

<table>
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<tr>
<th>Area</th>
<th>Funding (million euro)</th>
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<tbody>
<tr>
<td>Health, demographic change and wellbeing</td>
<td>8 033</td>
</tr>
<tr>
<td>Food security, sustainable agriculture, marine and maritime research &amp; the bioeconomy</td>
<td>4 152</td>
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<tr>
<td>Secure, clean and efficient energy*</td>
<td>5 782</td>
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<tr>
<td>Smart, green and integrated transport</td>
<td>6 802</td>
</tr>
<tr>
<td>Climate action, resource efficiency and raw materials</td>
<td>3 160</td>
</tr>
<tr>
<td>Inclusive, innovative and secure societies</td>
<td>3 819</td>
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*Additional €1 788m for nuclear safety and security from the Euratom Treaty activities (2014-2018). Does not include ITER.
Horizon 2020 and partnering

Public private partnerships:
- Through Joint Technology Initiatives or other formal structures (Art. 187)
- Through contractual agreements, which provide inputs for work programmes
- Only when criteria met, e.g. clear commitments from private partners

Public public partnerships:
- Through « ERA-Nets » for topping up individual calls/actions (replacing current ERA-Net, ERA-Net Plus, Inco-Net, Inno-net)
- Through participation in joint programmes between Member States (Art. 185)
- Supporting agendas of Joint Programming Initiatives when in line with Horizon 2020
- Only when criteria met, e.g. financial commitments of participating countries

European Innovation Partnerships:
- Not funding instruments, but for coordination with broader policies and programmes
# Role of the EIT and JRC in Horizon 2020

<table>
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<tr>
<th>European Institute Technology (EIT)</th>
<th>1 360+ 1 440*</th>
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<tr>
<td>Combining research, innovation &amp; training in knowledge and Innovation Communities</td>
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<tr>
<th>Joint Research Centre (JRC)**</th>
<th>1 962</th>
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<td>Providing a robust, evidence base for EU policies</td>
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*Second tranche pro rata from LEIT and Societal challenges (subject to review)*

**Additional €656 m for the JRC to be funded from the Euratom Treaty activities**
Euratom Programme 2014-2018

**Budget:** TOTAL: €1665 million, including Fission €336m; Fusion €673m; JRC €656m.

**Programme for 5 years, in line with the Euratom Treaty (art.7)**

**What is new?**
- Stronger focus on nuclear safety and nuclear training
- A single Euratom programme bringing together three separate decisions
- The same rules for participation as in the Horizon 2020 - simplified access
- Programme contributes to the implementation of priorities of the 'Horizon 2020'
- Fusion research programme will be restructured

**Funding for ITER outside MFF in a separate supplementary programme:** €2573 million for 2014-2018
Simplification: Rules for Participation

1. A single set of rules
   - Adapted for the whole research and innovation cycle
   - Covering all research 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 the total eligible costs (except for actions close to market, where a 70% maximum will apply)
   - Indirect eligible costs: a flat rate of 20% of direct eligible costs

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 but better protecting EU interests
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**
   - Lowest 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.

*Beyond the Rules: further simplified provisions in the Grant Agreement and implementing procedures to facilitate access to Horizon 2020 (e.g. common IT platform).*
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)
Contributing to the European Research Area (ERA)

- ERA framework proposal in 2012 to create a single market for knowledge research and innovation

- Complemented by Horizon 2020:
  - Boosting support to ERA priorities – mobility, infrastructures, knowledge transfer, policy learning
  - Stronger partnerships with Member States and private sector to invest more efficiently
  - Taking account of gender, ethical issues, researcher careers and open access to results
Strong participation by SMEs

- **Integrated approach** - around 15% of the total budget for societal challenges and LEITs to go to SMEs.

- **Simplification** of particular benefit to SMEs (e.g. single entry point).

- A **new SME instrument**, building on the SBIR model, will be used across all societal challenges as well as for the LEITs

- A dedicated activity for research-intensive SMEs in 'Innovation in SMEs'.

- 'Access to risk finance' will have a strong SME focus (debt and equity facility)
Links to COSME

Horizon 2020 and COSME are complementary programmes to generate growth and jobs

Different focus:
- Horizon 2020 = innovation driven growth
- COSME = support to create favourable business environment and competitiveness

Closely coordinated, for instance:
- Integrated financial instruments (debt and equity), with facilities in both programmes serving complementary objectives
- Enterprise Europe Network set up under COSME, but support to SMEs for EU funding
Socio-economic sciences and humanities

• **Integrated approach**: SSH included as an integral part of the activities, working beyond 'silos' (e.g. understanding the determinants of health and optimising the effectiveness of healthcare systems).

• The *Inclusive, Innovative and Secure Societies* **challenge**: issues such as smart and sustainable growth, social transformations, social innovation and creativity, the position of Europe as a global actor as well as the social dimension of a secure society (*SSH have the tools to contribute to addressing security challenges, enhancing the societal dimension of security policy and research*).

• **Bottom-up funding**: ERC, MCA, Research Infrastructures.
Widening participation

- **Principle of excellence**: continue to allocate funding on the basis of competitive calls, selecting only the best projects.

- **Clear division of labour** between cohesion policy and Horizon 2020.
  - Cohesion policy: support for regions in building up their research and innovation capacity.
  - Horizon 2020: widen participation, better coordination between the two Union funding programmes, support policy learning reforms.

- **Accompanying measures in Horizon 2020** to ensure that excellence prevails wherever it exists, including: twinning, ERA chairs, support for access to international networks, development of smart specialisation strategies.
International cooperation

- **International cooperation is crucial** to address many Horizon 2020 objectives.

- **Principle of general openness**: the programme will remain to be the most open funding programme in the world.

- Horizon 2020 shall be open to the association of: acceding countries, candidate countries and potential candidates and selected third countries that fulfil the relevant criteria (capacity, track record, close economic and geographical links to the Union, etc.).

- Targeted actions to be implemented taking a **strategic approach to international cooperation** (dedicated measures in the 'Inclusive, innovative and secure societies' challenge).
Next steps

**Ongoing:** Parliament and Council negotiations on the basis of the Commission proposals

**Ongoing:** Parliament and Council negotiations on EU budget 2014-2020 (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
Thank you for your attention!

Find out more:

www.ec.europa.eu/research/horizon2020

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http://industrialtechnologies2012.eu/event/