HORIZON 2020
The New EU Framework Programme for Research and Innovation
2014-2020
Giorgio Clarotti

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

1. Smart & inclusive growth (€451 billion)

2. Sustainable growth, natural resources (€373 billion)
3. Security and citizenship (€16 billion)
4. Global Europe (€58 billion)
5. Administration (€61.6 billion)

TOTAL €960 billion
Investment in R&D is part of the solution to exit from the economic crises

Source: DG Research and Innovation - Economic Analysis Unit
Data: Eurostat

What is Horizon 2020

- Initial Commission proposal for a €80 billion research and innovation funding programme (2014-2020); now just over €70 billion (79 billion in current prices including inflation)
- 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

Excellent science

Industrial leadership

Societal challenges

22%

31%

39%

In addition 8% are invested in the EIT and in the JRC

HORIZON 2020
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, 2014-2020) = 31%

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
<th>Budget (€ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Research Council (ERC)</td>
<td>54 %</td>
<td>13 095</td>
</tr>
<tr>
<td>Frontier research by the best individual teams</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future and Emerging Technologies</td>
<td>11 %</td>
<td>2 696</td>
</tr>
<tr>
<td>Collaborative research to open new fields of innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marie Skłodowska-Curie actions (MSCA)</td>
<td>10 %</td>
<td>6 162</td>
</tr>
<tr>
<td>Opportunities for training and career development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research infrastructures (including e-infrastructure)</td>
<td>25 %</td>
<td>2 488</td>
</tr>
<tr>
<td>Ensuring access to world-class facilities</td>
<td></td>
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</tbody>
</table>

HORIZON 2020
Priority 2. Industrial leadership

Why:

- Strategic investments in key technologies (e.g. advanced manufacturing, microelectronics) underpin innovation across existing and emerging sectors
- Europe needs to attract more private investment in research and innovation
- Europe needs more innovative small and medium-sized enterprises (SMEs) to create growth and jobs
### Proposed funding (€ million, 2014-2020) = 22%

<table>
<thead>
<tr>
<th><strong>Leadership in enabling and industrial technologies (LEITs)</strong></th>
<th><strong>13 557</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>Access to risk finance</strong></th>
<th><strong>2 842</strong></th>
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</thead>
<tbody>
<tr>
<td>Leveraging private finance and venture capital for research and innovation</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th><strong>Innovation in SMEs</strong></th>
<th><strong>616</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fostering all forms of innovation in all types of SMEs</td>
<td></td>
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</tbody>
</table>

* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)
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, 2014-2020) = 39%

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<thead>
<tr>
<th>Category</th>
<th>Funding (€ million)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health, demographic change and wellbeing</td>
<td>7 472</td>
<td>24%</td>
</tr>
<tr>
<td>Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy</td>
<td>3 851</td>
<td>12%</td>
</tr>
<tr>
<td>Secure, clean and efficient energy *</td>
<td>5 931</td>
<td>19%</td>
</tr>
<tr>
<td>Smart, green and integrated transport</td>
<td>6 339</td>
<td>20%</td>
</tr>
<tr>
<td>Climate action, environment, resource efficiency and raw materials</td>
<td>3 081</td>
<td>10%</td>
</tr>
<tr>
<td>Inclusive, innovative and reflective societies</td>
<td>1 310</td>
<td>4%</td>
</tr>
<tr>
<td>Secure societies</td>
<td>1 695</td>
<td>5%</td>
</tr>
<tr>
<td>Science with and for society</td>
<td>462</td>
<td>1%</td>
</tr>
<tr>
<td>Spreading excellence and widening participation</td>
<td>816</td>
<td>3%</td>
</tr>
</tbody>
</table>

* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)
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-NET COfund action 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
Innovation Investment Package

€22 billion Innovation Investment Package

Joint Technology Initiatives (under Article 187)
- Innovative Medicines Initiative 2
- Clean Sky (Aeronautics) 2
- Fuel Cell and Hydrogen 2
- Bio-based Industries
- Electronic components and systems

Joint programmes (under Article 185)
- European and Developing Countries Clinical Trials Partnership (EDCTP) 2
- European Metrology Research Programme 2
- Eurostars (for SMEs) 2
- Active and Assisted Living 2

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Benefits of Partnerships

Joint Technology Initiatives (with industry)
• Industry driven research agenda
• Fixed budget for 7 years to leverage more industry investment
• Sector structuring to achieve impact
• Coverage of longer value chains and interrelated sectors
• Higher level of SME participation (30%) than in FP7
• Links and synergies with Structural and Investment Funds

Joint programmes (with Member States)
• Link to national programmes
• Leverage effect
• Industry involvement
• Cross-border collaboration
## Role of the EIT and JRC in Horizon 2020

<table>
<thead>
<tr>
<th><strong>European Institute of Innovation &amp; Technology (EIT)</strong></th>
<th><strong>Proposed funding (€ million, 2014-2020)</strong></th>
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</thead>
<tbody>
<tr>
<td>Combining research, innovation &amp; training in knowledge and Innovation Communities</td>
<td>2 711 (3.5%)</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>Joint Research Centre (JRC)</strong>*</th>
<th><strong>Proposed funding (€ million, 2014-2020)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing a robust, evidence base for EU policies</td>
<td>1 903 (2.4%)</td>
</tr>
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</table>

* Additional funding for the JRC for Euratom Treaty activities
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 innovation actions, where a 70% maximum will apply for profit making entities)
   ✓ Indirect eligible costs: a flat rate of 25% 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:** time-to-grant of 8 months; exceptions for the ERC and in duly justified cases
- **No negotiation of the grant agreement in future, what is submitted will be evaluated. Potential participants must now be aware of this.**
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 20% 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** 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)
Socio-economic sciences and humanities (SSH)

- **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 and reflective 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, MSCA, 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 international partner 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)
EURATOM

**Budget:** €1603 million (2014-2018) to support Fusion and Fission indirect actions and nuclear direct actions of the JRC

**Duration of the Programme** - 5 years, in line with the Euratom Treaty

**What is new?**
- Euratom Programme complements Horizon 2020 and addresses the same key challenges;
- The same rules for participation apply to Horizon 2020 and Euratom Programme;
- A streamlined fusion research programme focusing on the implementation of the fusion roadmap;
- A single regulation instead of four separate decisions during FP7
Thank you for your attention!

Find out more:
www.ec.europa.eu/horizon2020