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)
In addition, 8% are invested in the EIT and in the JRC.
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>Programme</th>
<th>Proposed Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Research Council (ERC)</td>
<td>13 095</td>
</tr>
<tr>
<td>Frontier research by the best individual teams</td>
<td></td>
</tr>
<tr>
<td>Future and Emerging Technologies</td>
<td>2 696</td>
</tr>
<tr>
<td>Collaborative research to open new fields of innovation</td>
<td></td>
</tr>
<tr>
<td>Marie Skłodowska-Curie actions (MSCA)</td>
<td>6 162</td>
</tr>
<tr>
<td>Opportunities for training and career development</td>
<td></td>
</tr>
<tr>
<td>Research infrastructures (including e-infrastructure)</td>
<td>2 488</td>
</tr>
<tr>
<td>Ensuring access to world-class facilities</td>
<td></td>
</tr>
</tbody>
</table>

- **54%** European Research Council (ERC)
- **11%** Future and Emerging Technologies
- **25%** Research infrastructures (including e-infrastructure)
- **10%** Marie Skłodowska-Curie actions (MSCA)
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 small and medium-sized enterprises (SMEs) to create growth and jobs
<table>
<thead>
<tr>
<th>Category</th>
<th>Funding (€ million, 2014-2020)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership in enabling and industrial technologies (LEITs) (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)</td>
<td>13 557</td>
<td>80 %</td>
</tr>
<tr>
<td>Access to risk finance</td>
<td>2 842</td>
<td>17 %</td>
</tr>
<tr>
<td>Innovation in SMEs</td>
<td>616 + complemented by expected 20% of budget of societal challenges + LEITs and 'Access to risk finance' with strong SME focus</td>
<td>4% - 20%</td>
</tr>
</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%

<table>
<thead>
<tr>
<th>Area</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
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>
</tr>
</thead>
<tbody>
<tr>
<td>Combining research, innovation &amp; training in knowledge and Innovation Communities</td>
<td>2 711 (3.5%)</td>
</tr>
</tbody>
</table>

<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>
</tbody>
</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