Commission proposal for

Horizon Europe

THE NEXT EU RESEARCH & INNOVATION PROGRAMME (2021 – 2027)

#HorizonEU

Maria da Graça Carvalho
Coimbra Group High Level Seminar
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Horizon Europe

is the Commission proposal for a €100 billion research and innovation funding programme for seven years (2021-2027)

- to strengthen the EU's scientific and technological bases
- to boost Europe's innovation capacity, competitiveness and jobs
- to deliver on citizens' priorities and sustain our socio-economic model and values

Additional €4.1 billion are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund
Added value through Horizon Europe:

- Trans-national collaboration, exchange and networks
- Critical mass to address global challenges
- Competitive funding promoting excellence
- Visibility for leading research and innovation
- Transnational mobility
- Creating new market opportunities
- Strengthened European R&I landscape
- Attracting the best talents
Horizon Europe – What's new?
Lessons Learned from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens’ involvement
- Strengthen international cooperation
- Reinforce openness
- Rationalise the funding landscape

Key Novelties in Horizon Europe

- European Innovation Council
- R&I Missions
- Extended association possibilities
- Open science policy
- New approach to Partnerships
European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors.

Helping innovators create markets of the future, leverage private finance, scale up their companies, Innovation centric, risk taking & agile, pro-active management and follow up

Two complementary instruments bridging the gap from idea to investable project

**Pathfinder:** grants
(from early technology to pre-commercial)

**Accelerator:**
grants & blended finance
(from pre-commercial to market & scale-up)
R&I Missions

Relating EU’s research and innovation better to society and citizens’ needs; with strong visibility and impact

A mission is a portfolio of actions intended to achieve a bold and inspirational as well as measurable goal within a set timeframe, with impact for science and technology, society and citizens that goes beyond individual actions.

Horizon Europe proposal defines mission characteristics and elements of governance.

Specific missions will be co-designed with Member States, stakeholders and citizens and programmed within the Global Challenges and Industrial Competitiveness pillar (drawing on inputs from other pillars).
International Cooperation

Tackling together global societal challenges; access to the world's best talents, expertise and resources; enhanced supply and demand of innovative solutions

Extended openness to association

- Third countries with good capacity in science, technology and innovation
- Taking into account objective of driving economic growth in Europe through innovation

- General opening for international participation
- Intensified targeted actions (flagship initiatives, joint calls, etc.)
Open Science across the programme

Better dissemination and exploitation of R&I results and support to active engagement of society

- **Mandatory Open Access to publications**: beneficiaries must ensure the existence of sufficient rights to comply with open access requirements
- **Mandatory Data Management Plan for FAIR (Findable, Accessible, Interoperable, Re-usable) and Open Research Data**: for all research data with possibilities to opt-out from open access requirements

- Support to researcher skills in and reward systems for open science
- Use of European Open Science Cloud
New approach to European Partnerships

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key features
- Simple architecture and toolbox
- Coherent life-cycle approach
- Strategic orientation

Co-programmed
Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

Co-funded
Based on a joint programme agreed by partners; commitment of partners for financial and in-kind contributions & financial contribution by Horizon Europe

Institutionalised
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe
Horizon Europe – What?
Horizon Europe: evolution not revolution

Specific objectives of the Programme

- Support the creation and diffusion of high-quality knowledge
- Strengthen the impact of R&I in supporting EU policies
- Foster all forms of innovation and strengthen market deployment

Optimise the Programme’s delivery for impact in a strengthened ERA

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**Pillar 1**
Open Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

**Pillar 2**
Global Challenges and Industrial Competitiveness

- Health
- Inclusive and Secure Society
- Digital and Industry
- Climate, Energy and Mobility
- Food and natural resources
- Joint Research Centre

**Pillar 3**
Open Innovation

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

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**Strengthening the European Research Area**

- Sharing excellence
- Reforming and Enhancing the European R&I system
Budget: €100 billion* (2021-2027)

€ billion
In current prices

- Open Science
- Global Challenges & Ind. Competitiveness
- Open Innovation
- Strengthening ERA
- Euratom

* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.
Horizon Europe – In detail
Pillar 1

OPEN SCIENCE: reinforcing and extending the excellence of the Union's science base

**European Research Council**
- Frontier research by the best researchers and their teams
  - € 16.6 billion

**Marie Skłodowska-Curie Actions**
- Equipping researches with new knowledge and skills through mobility and training
  - € 6.8 billion

**Research Infrastructures**
- Integrated and inter-connected world-class research infrastructures
  - € 2.4 billion
Pillar 2
Global Challenges & Industrial Competitiveness: boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

<table>
<thead>
<tr>
<th>Clusters</th>
<th>Budget (€ billion)</th>
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</thead>
<tbody>
<tr>
<td>Health</td>
<td>€ 7.7</td>
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<tr>
<td>Inclusive and Secure Society</td>
<td>€ 2.8</td>
</tr>
<tr>
<td>Digital and Industry</td>
<td>€ 15</td>
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<tr>
<td>Climate, Energy and Mobility</td>
<td>€ 15</td>
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<tr>
<td>Food and Natural Resources</td>
<td>€ 10</td>
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</tbody>
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**Joint Research Centre**
supports European policies with independent scientific evidence & technical support throughout the policy cycle

€ 2.2
Pillar 3
OPEN INNOVATION: stimulating market-creating breakthroughs and ecosystems conducive to innovation

European Innovation Council
- Support to innovations with breakthrough and market creating potential

European innovation ecosystems
- Connecting with regional and national innovation actors

European Institute of Innovation and Technology (EIT)
- Bringing key actors (research, education and business) together around a common goal for nurturing innovation

€ 10.5 billion, incl. up to € 500 million for ecosystems

€ 3 billion

25 June 2018 | Version 23
Strengthening the European Research Area: optimising strengths & potential for a more innovative Europe

Sharing Excellence
- Teaming (institution building)
- Twinning (institutional networking)
- ERA Chairs
- COST

Reforming and enhancing the European R&I system
- Scientific evidence & foresight
- Open Science
- Policy Support Facility
- Attractive researcher careers
- Citizen science, Responsible Research & Innovation
- Gender equality

€ 1.7 billion
€ 0.4 billion
Euratom research and training programme (2021-2025)

- **Objective**
  Research and training activities to reduce nuclear safety and security risks, development of safe nuclear technologies and optimal radiation protection.

- **Key novelties**
  - Increased focus on non-power applications of radiation (medical, industrial, space)
  - Opening mobility opportunities for nuclear researchers through inclusion in Marie Skłodowska-Curie Actions
  - Simplification: Specific objectives from currently 14 to 4, covering both direct actions (implemented by JRC) and indirect actions

- **Budget:** € 2.4 billion (2021-2027)
Horizon Europe – How?
Simple and fit for purpose rules

- Further alignment to the Financial Regulation
- Increased use of simplified forms of grants where appropriate (building on the H2020 lump sum pilot experience)
- Broader acceptance of usual cost accounting practices
- Enhanced cross-reliance on audits benefiting beneficiaries taking part in several Union programmes

while ensuring continuity and consistency for beneficiaries by maintaining

- Attractive H2020 funding model, including up to 100% funding rate
- Single set of rules principle
Synergies with other Union programmes

Horizon Europe

Other Union Programmes, including
- Common Agricultural Policy
- ERDF
- External Instrument
- Maritime & Fisheries Fund
- InvestEU
- LIFE
- Erasmus
- Connecting Europe Facility
- Innovation Fund
- Internal Security Fund
- ESF+
- Digital Europe
- Single Market Programme
- Space Programme
- Horizon Europe

Enhanced synergies

Compatibility
Harmonisation of funding rules; flexible co-funding schemes; pooling resources at EU level

Coherence and complementarity
Alignment of strategic priorities in support of a common vision
Strategic planning to define multiannual work programmes and calls for proposals

- Transparency and stakeholder involvement
- Prioritisation and flexibility to align to political priorities
- Internal programme coherence & synergies with other programmes

Multiannual Strategic R&I Plan

* Multiannual orientations and priorities in one document
* Areas for partnerships and missions

Strategic discussions with Member States and European Parliament
Consultation with stakeholders

Work Programmes
Key impact pathways to track progress

1. Creating high-quality new knowledge
2. Strengthening human capital in R&I
3. Fostering diffusion of knowledge and Open Science

4. Addressing EU policy priorities through R&I
5. Delivering benefits & impact via R&I missions
6. Strengthening the uptake of innovation in society

7. Generating innovation-based growth
8. Creating more and better jobs
9. Leveraging investments in R&I
Next steps

- **ON GOING** Parliament and Council negotiations on Union budget 2021-2027, including budget for Horizon Europe
- **WEEK OF 10 DEC** Parliament vote in Plenary
- **MIDDLE DEC-MIDDLE MARCH 2019** Parliament and Council negotiations
- **APRIL 2019** Final Parliament vote in Plenary
- **SECOND HALF OF 2019** Strategic planning to prepare first work programmes under Horizon Europe, including co-design of missions and setting up of partnerships
- **1 JANUARY 2021** Envisaged start of Horizon Europe
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https://www.facebook.com/EUScienceInnov/
https://www.facebook.com/cmoedas/

Horizon Europe dedicated website
http://ec.europa.eu/horizon-europe

European Innovation Council
http://ec.europa.eu/research/eic

EU budget for the future
http://ec.europa.eu/budget/mff/index_en.cfm
Annex with additional material
Building on the success of the EU’s past flagship research and innovation programmes, the Commission proposes to increase investment in research-innovation and digital by allocating **€ 114.2 billion** for the future Multiannual Financial Framework.
## Clusters in 'Global Challenges and Industrial Competitiveness'

<table>
<thead>
<tr>
<th>Clusters</th>
<th>Areas of intervention</th>
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<tbody>
<tr>
<td><strong>Health</strong></td>
<td>* Health throughout the life course</td>
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<td></td>
<td>* Non-communicable and rare diseases</td>
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<td></td>
<td>* Tools, technologies and digital solutions for health and care</td>
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<td></td>
<td>* Environmental and social health determinants</td>
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<td></td>
<td>* Infectious diseases</td>
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<td></td>
<td>* Health care systems</td>
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<tr>
<td><strong>Inclusive and Secure Societies</strong></td>
<td>* Democracy</td>
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<td></td>
<td>* Social and economic transformations</td>
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<td></td>
<td>* Protection and Security</td>
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<td>* Cultural heritage</td>
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<td></td>
<td>* Disaster-resilient societies</td>
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<td></td>
<td>* Cybersecurity</td>
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<td><strong>Digital and Industry</strong></td>
<td>* Manufacturing technologies</td>
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<td>* Advanced materials</td>
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<td>* Next generation internet</td>
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<td></td>
<td>* Circular industries</td>
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<td></td>
<td>* Space</td>
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<tr>
<td></td>
<td>* Key digital technologies</td>
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<tr>
<td></td>
<td>* Artificial intelligence and robotics</td>
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<td>* Advanced computing and Big Data</td>
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<td></td>
<td>* Low carbon and clean industry</td>
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<td><strong>Climate, Energy and Mobility</strong></td>
<td>* Climate science and solutions</td>
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<td></td>
<td>* Energy systems and grids</td>
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<td>* Communities and cities</td>
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<td>* Industrial competitiveness in transport</td>
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<td>* Smart mobility</td>
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<td>* Energy supply</td>
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<td>* Buildings and industrial facilities in energy transition</td>
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<td></td>
<td>* Clean transport and mobility</td>
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<td>* Energy storage</td>
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<td><strong>Food and Natural Resources</strong></td>
<td>* Environmental observation</td>
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<td>* Agriculture, forestry and rural areas</td>
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<td>* Food systems</td>
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<td>* Circular systems</td>
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<td></td>
<td>* Biodiversity and natural capital</td>
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<td>* Sea and oceans</td>
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<td>* Bio-based innovation systems</td>
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Implementation Strategy to shift the focus from administration to content

- Enhancing harmonisation with other EU programmes
- Simplifying the model grant agreements and guidance to be beneficiaries
- Participant Portal – one stop shop for easy access to EU funding and project implementation

Early consultation with stakeholders/ready to start in 2021
Thank you!

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http://ec.europa.eu/horizon-europe