

# Horizon Europe

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

**Agnès Robin and Roberta Zobbi**  
**European Commission – DG RTD**  
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**#HorizonEU**

*Research and  
Innovation*

# European Parliament and Council reached a common understanding on Horizon Europe on 19 March 2019 (Partial General Approach - PGA)

- Budget, synergies and third country association still pending, depending on the overall MFF negotiations
- Commission has started preparations for the implementation of Horizon Europe



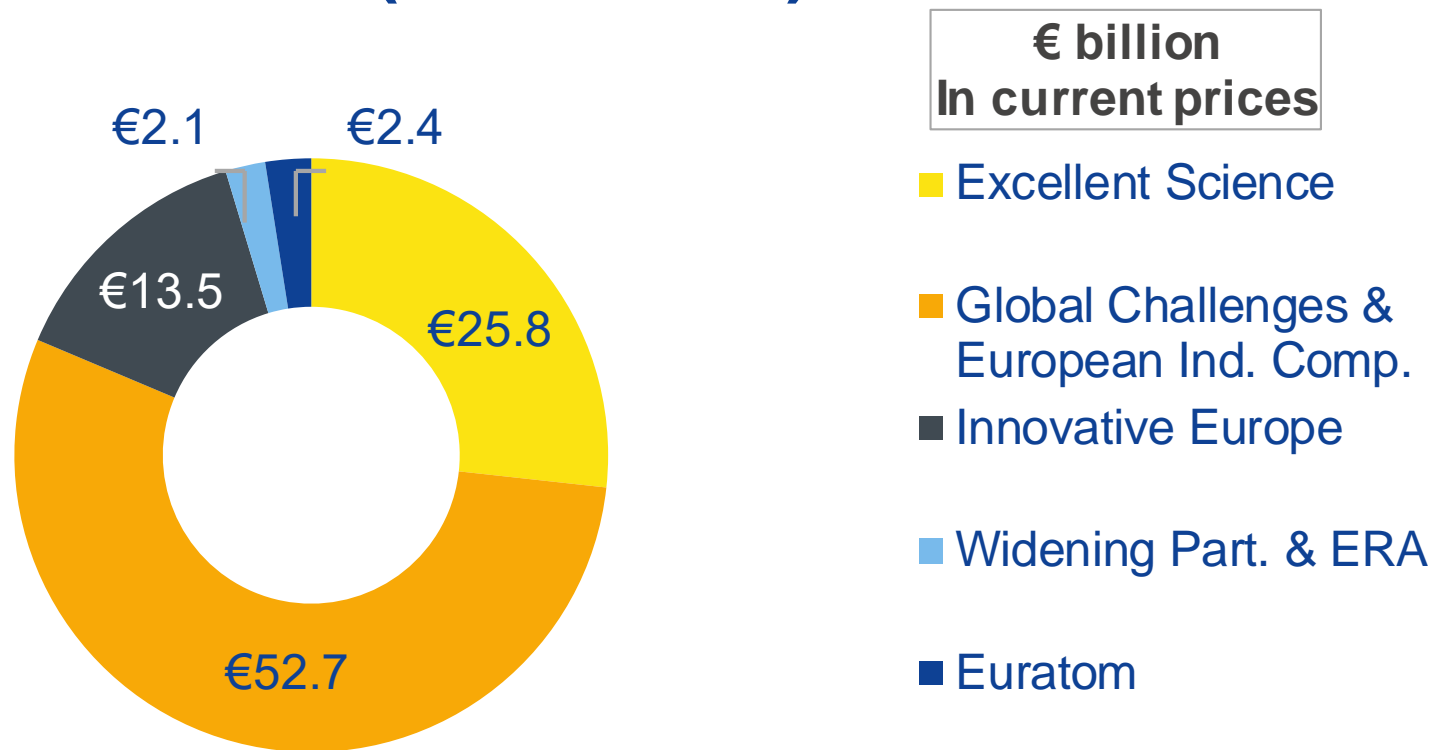
# Horizon Europe: R&I policy priorities to shape our future

- The vision:  
" a Europe that protects,  
a Europe that empowers,  
a Europe that defends"  
*Jean-Claude Juncker*
- Tackling **climate change**  
(35 % budgetary target)
- Helping to achieve **Sustainable Development Goals**
- Boosting the Union's  
**competitiveness and growth**



Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

# Commission proposal for budget: €100 billion\* (2021-2027)

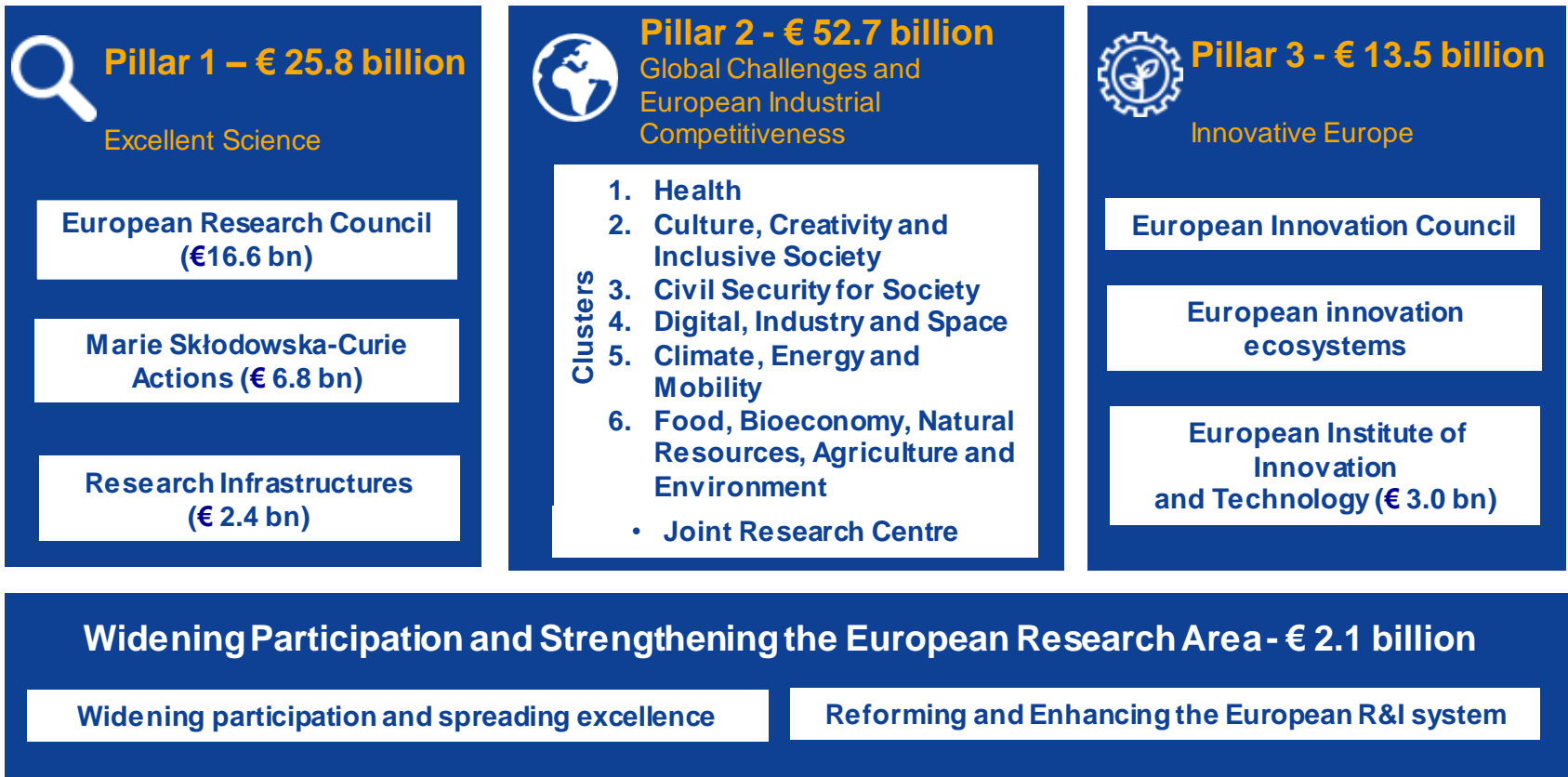


\* This envelope includes EUR 3.5 bn allocated under the **InvestEU Fund**. Additional EUR 4.1 bn are proposed to be allocated for **defence research** (separate proposal for a EU Defence Fund).

Common understanding: at least 3.3% of HE budget – **Widening part. & ERA**

# Horizon Europe: structure and objectives

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





# Horizon Europe – What's new?

# Lessons Learned

## from Horizon 2020 Interim Evaluation

# Key Novelties

## in Horizon Europe



Support breakthrough innovation



European Innovation Council



Create more impact through mission-orientation and citizens' involvement



R&I Missions



Strengthen international cooperation



Extended association possibilities



Reinforce openness



Open science policy



Rationalise the funding landscape



New approach to Partnerships



Encourage participation



Spreading Excellence



# European Innovation Council

Support to innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors (**70% of the budget earmarked for SMEs**)

**European  
Innovation Council  
– a one-stop-shop**

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 only & blended finance  
(from pre-commercial  
to market & scale-up)





# R&I Missions

## R&I Missions

EU's research and innovation to address society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas.

Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars)

**Adaptation to climate  
change, including societal  
transformation**



**Healthy  
oceans,  
seas,  
coastal  
and inland  
waters**



**5 Mission  
areas**



**Cancer**

**Climate-neutral  
and smart cities**



**Soil health  
and food**

# Mission Boards

- **EoI call** for Chairs and Board members: **Publication on 13/5 – deadline 11/6 at 12.00**
- **Next steps:**
  - Chairs announced at 4 July COMPET Council
  - Finalisation names by end July
  - First meetings of the Mission Boards 2-16 Sept
  - 24-26 September: R&I Days with several sessions for missions



# 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 and implemented by partners; commitment of partners for financial and in-kind contributions

### 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

**Health  
innovations**



**Areas for  
possible  
Institutionalised  
European  
partnerships  
(based on Article  
185/187 TFEU)**



**Sustainable  
bio-based  
solutions**



**Hydrogen  
and  
sustainable  
energy  
storage**



**Clean,  
connected  
mobility**



**Innovative  
SMEs**

**Key digital  
and enabling  
technologies**



**Metrology**



**EU air  
traffic,  
aviation  
and rail**



**European  
Commission**





# International Cooperation

## 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

## Open Science

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

**Mandatory Open Access to publications:** beneficiaries shall ensure that they or the authors retain sufficient intellectual property rights to comply with open access requirements

**Open Access to research data ensured:** in line with the principle "as open as possible, as closed as necessary"; Mandatory Data Management Plan for FAIR (Findable, Accessible, Interoperable, Re-usable) and Open Research Data

- Support to researcher skills and reward systems for open science
- Contribute to and use of European Open Science Cloud + governance

# Horizon Europe – Implementation strategy

# A tool for co-creation: the Strategic plan

## Proposal for a Decision of the Council on establishing the specific programme implementing Horizon Europe

### Art 4a.1

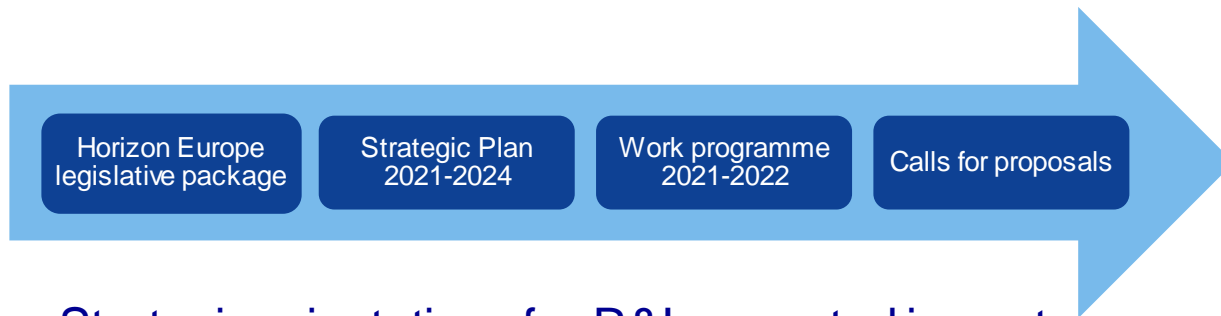
*(...) the implementation of the Specific Programme shall be facilitated by a **multiannual Strategic Plan** of R&I activities, also promoting consistency between the work programmes, EU priorities and national priorities.*

### Art 4a.2

*The Strategic Planning process shall focus in particular on the ‘**Global challenges and the European competitiveness**’ pillar and cover also relevant activities in other pillars and the Widening Participation and Strengthening the ERA part.*

*The Commission shall ensure **early involvement and extensive exchanges** with the MSs, and extensive exchanges with the EP, complemented by consultation with the public at large*

# Strategic Plan for implementing Horizon Europe



The **Strategic Plan** (*new implementing act by the Commission*) will prepare the content in the work programmes and calls for proposals for the first **four years**

- Strategic orientations for R&I, expected impacts
- Identification of partnerships and missions
- Areas for international cooperation
- Issues such as:
  - Balance between research and innovation
  - Social Sciences and Humanities; gender; ethics and integrity
  - Key Enabling Technologies and strategic value chains
  - Dissemination and exploitation

## Main Features

Early involvement and extensive exchanges with Member States

Extensive exchanges with the European Parliament

Consultations with stakeholders and public at large



# Steps towards the first Horizon Europe work programme



# Horizon Europe – Research Infrastructures

# Research Infrastructures in HE:

## Main features 3 Areas of interventions

- **Pillar 1 – Excellent science:** reinforcing and extending the excellence of the Union's science base
- **Commission proposal:** € 2.4 billion 2021- 2027
- **Aim:** Integrated and inter-connected world-class research infrastructures
- **High level of continuity but some challenges still to be addressed:**
  - sustainability of RIs;
  - deployment and effective use of the EU Open Science Cloud – EOSC;
  - overcome barriers to transnational access;
  - foster the innovation potential of RIs and develop tech infrastructures;
  - reinforce the international dimension of RIs.

# Research Infrastructures in HE:

## 3 Areas of intervention

1. ***Consolidating the Landscape of European Research Infrastructures***
2. ***Opening, Integrating and Interconnecting Research Infrastructures***
3. ***Reinforcing European Research Infrastructure policy and International Cooperation***

# ***Consolidating the Landscape of European Research Infrastructures***

## ***Rationale:***

- The **development, operation and sustainability of ESFRI RI** is essential to the creation and use of new knowledge and the competitiveness of industries
- The **EOSC should become an effective and comprehensive delivery channel for RI services**. The EOSC should also provide researchers with access to data generated and collected by RI as well as to HPC and exascale resources deployed under the EDI
- The **pan-European research and education network** will link together and enable **remote access** to RI and research resources, by providing **interconnectivity** at EU level as well as to other partner networks worldwide.



# ***Consolidating the Landscape of European Research Infrastructures***

## ***Lines of action:***

- **Design of new RI; preparatory and implementation phase, early-phase operation** of pan EU RI in complementarity with other funding sources, consolidation and optimisation of the RI ecosystem by facilitating service agreements, evolutions, mergers or decommissioning;
- **Scalability and sustainability of the EOSC access channel**; effective federation of European, national, regional and institutional resources; its technical and policy evolution to cope with new research needs and requirements; data inter-operability and compliance with the FAIR principles;
- **Support pan-European research and education network** underpinning the EOSC and EDI as well as enabling the delivery of HPC/data services in a cloud based environment.

# *Opening, Integrating and Interconnecting Research Infrastructures*

## **Rationale:**

Enhance the research landscape by ensuring openness to key international, national and regional RI and integrating their services so as to:

- **harmonise access conditions;**
- **improve and enlarge service provision;**
- encourage common development strategy of high tech components and advanced services through **innovation actions.**

# ***Opening, Integrating and Interconnecting Research Infrastructures***

## **Lines of action:**

- Networks of national and regional funders of RI for the **co-funding of trans-national access**;
- Networks of pan EU, national and regional RI addressing **global challenges** for the provision of access and harmonisation & improvement of services;
- Integrated networks of RI for development and implementation of a common strategy/roadmap for technological development required to improve their services through **partnership with industry**; as well as high-tech components in areas such as scientific instrumentation; and for fostering the use of RI by industry.

# ***Reinforcing the international dimension of European research infrastructures***

## **Rationale:**

A stronger cooperation with international counterparts and international participation in European research infrastructures would :

- Strengthen the position of European RI on the **international arena**
- **Promote the European standards and approach** to access, data management and open science to third countries.

## ***Lines of action:***

- Survey, monitoring and assessment of RI at EU level;
- Policy studies, communication and training actions;
- International cooperation actions for RI;
- Specific activities of relevant policy and advisory bodies



**Thank you!**

**Any questions?**

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**<http://ec.europa.eu/horizon-europe>**