

Commission proposal for **Horizon Europe**

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

#HorizonEU

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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

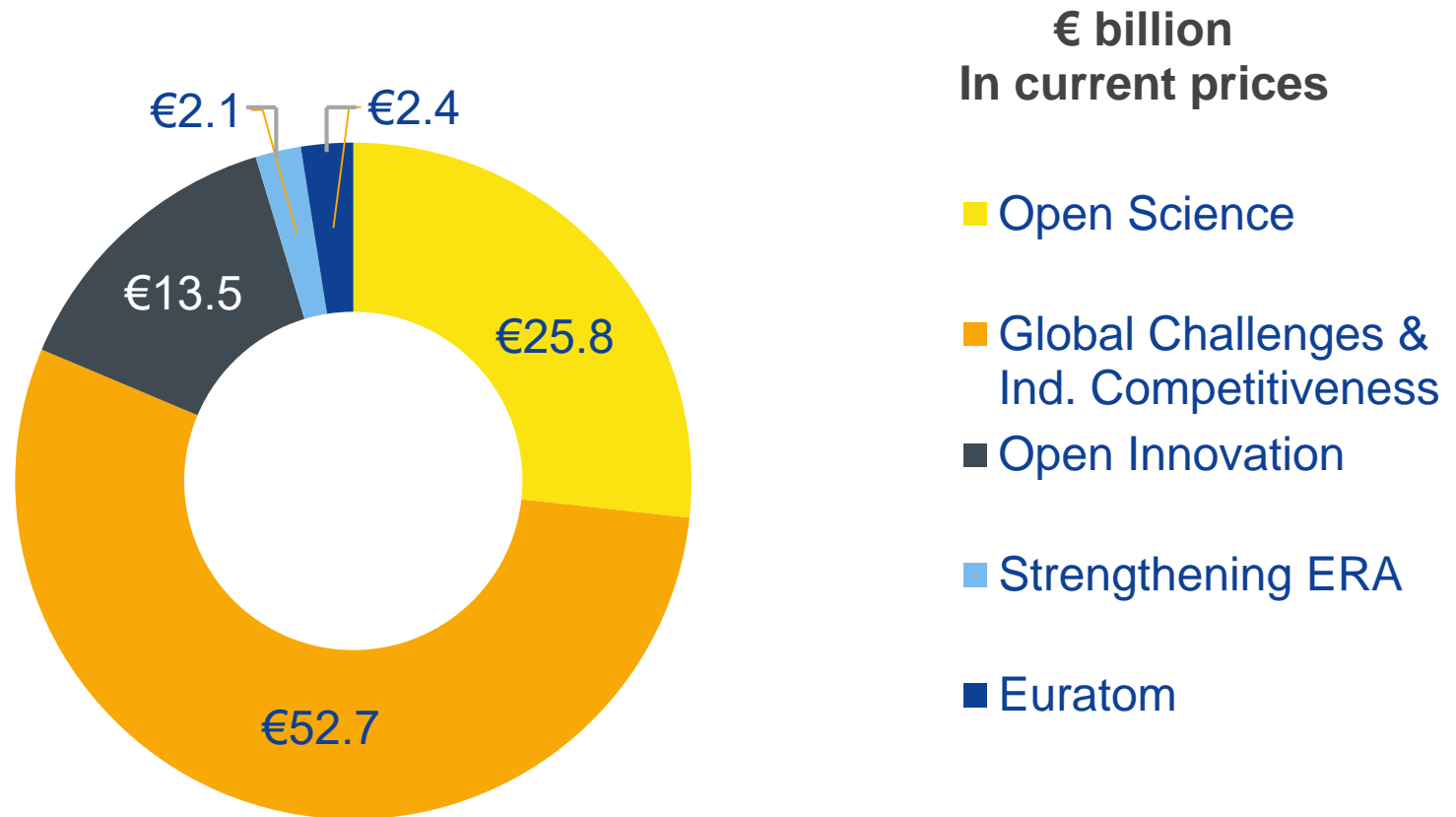
€ 4.1 billion are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund

European Parliament and Council reached a common understanding on Horizon Europe on 19 March 2019

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

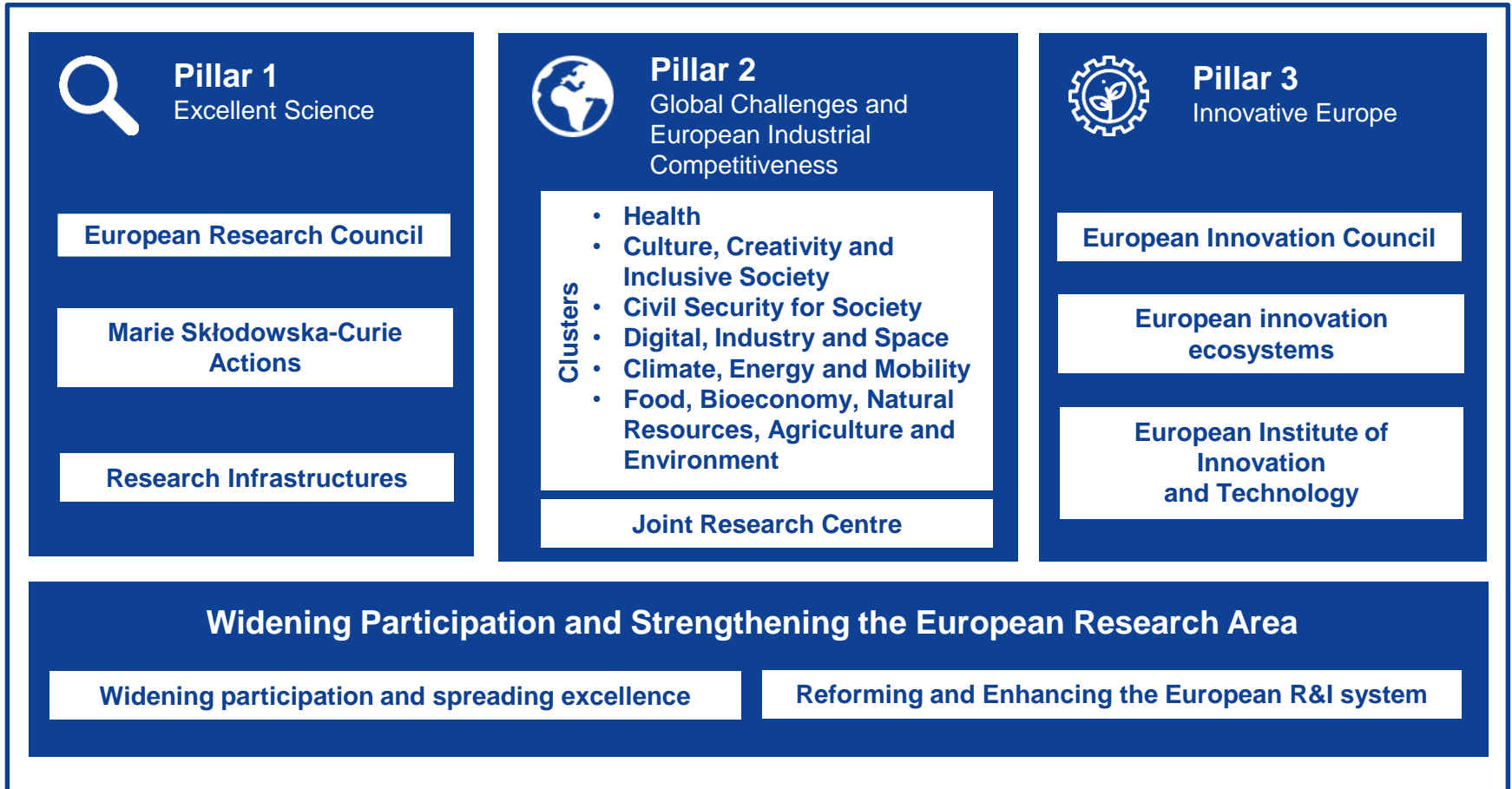


Budget: €100 billion* (2021-2027)



* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

Horizon Europe: Preliminary structure



CLUSTER 5 Climate, Energy and Mobility

Key features

More **impact-focused R&I** – supporting the implementation of EU policy goals and links between fuels/electricity (supply-side) and transport (demand-side)

New **holistic / system-wide / integrated view** – e.g. focus on citizens, industry and user needs

More **synergies** across R&I areas, along the full innovation cycle:

- ❑ between thematic areas (e.g. low-emission mobility, energy & climate)
- ❑ between clusters (e.g. digital and automated mobility)
- ❑ between pillars (through wide / joint Missions)
- ❑ with other EU / funding instruments (e.g. CEF, LIFE)

Mainstreaming and thus more impact of Social Sciences & Humanities, citizen & consumer empowerment, economic & behavioural aspects, standardisation and innovation-friendly frameworks

Clusters in 'Global Challenges and Industrial Competitiveness'

Clusters	Areas of intervention	
Health	<ul style="list-style-type: none"> • Health throughout the life course • Non-communicable and rare diseases • Tools, technologies and digital solutions for health and care, including personalised medicine 	<ul style="list-style-type: none"> • Environmental and social health determinants • Infectious diseases, including poverty-related and neglected disease • Health care systems
Culture, creativity and inclusive society	<ul style="list-style-type: none"> • Democracy and Governance • Social and economic transformations 	<ul style="list-style-type: none"> • Culture, cultural heritage and creativity
Civil security for society	<ul style="list-style-type: none"> • Disaster-resilient societies • Protection and Security 	<ul style="list-style-type: none"> • Cybersecurity
Digital, Industry and space	<ul style="list-style-type: none"> • Manufacturing technologies • Advanced materials • Next generation internet • Circular industries • Space, including Earth Observation • Emerging enabling technologies 	<ul style="list-style-type: none"> • Key digital technologies, including quantum technologies • Artificial Intelligence and robotics • Advanced computing and Big Data • Low-carbon and clean industry • Emerging enabling technologies
Climate, Energy and Mobility	<ul style="list-style-type: none"> • Climate science and solutions • Energy systems and grids • Communities and cities • Industrial competitiveness in transport • Smart mobility 	<ul style="list-style-type: none"> • Energy supply • Buildings and industrial facilities in energy transition • Clean, safe and accessible transport and mobility • Energy storage
Food, bioeconomy, natural resources, agriculture and environment	<ul style="list-style-type: none"> • Environmental observation • Agriculture, forestry and rural areas • Circular systems • Food systems 	<ul style="list-style-type: none"> • Biodiversity and natural resources • Seas, oceans and inland waters • Bio-based innovation systems in the EU Bioeconomy

Area “Energy Systems and Grids”

- Growth of variable electricity production and shift towards more electric heating, cooling and transport -> new approaches to manage energy grids ensuring energy affordability, security and stability of supply
- Optimise smart and integrated operation of infrastructure

Broad Lines:

- ✓ Technologies and tools for electricity networks to integrate renewables and new loads (e.g. electro-mobility, heat pumps)
- ✓ Pan-European energy network approaches to management;
- ✓ Integrated approaches to match renewable energy production and consumption at local level
- ✓ Network flexibility and synergies between the different energy sources, networks, infrastructures and actors;

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 (**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, proactive 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

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)

Adaptation to climate change, including societal transformation



Mission areas

Healthy oceans, seas, coastal and inland waters



Cancer

Climate-neutral and smart cities



Soil health and food



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

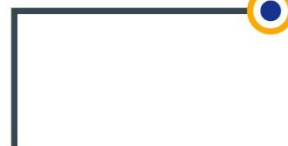
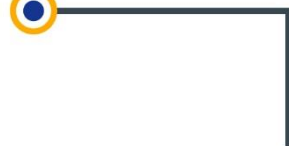
Co-funded

Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

Institutionalised

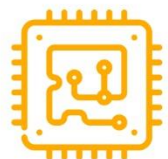
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe

Health innovations



Sustainable bio-based solutions

Key digital and enabling technologies



Hydrogen and sustainable energy storage

Metrology



Clean, connected mobility

EU air traffic, aviation and rail



Innovative SMEs

Areas for possible Institutionalised European partnerships (based on Article 185/7 TFEU)



European Commission

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 orientation for R&I support, expected impacts
- Partnerships and missions
- Areas for international cooperation
- Issues such as:
 - Balance between research and innovation
 - Social Sciences and Humanities
 - Key Enabling Technologies and strategic value chains
 - Gender
 - Ethics and integrity
 - Dissemination and exploitation

Strategic plan gives direction to the work programme



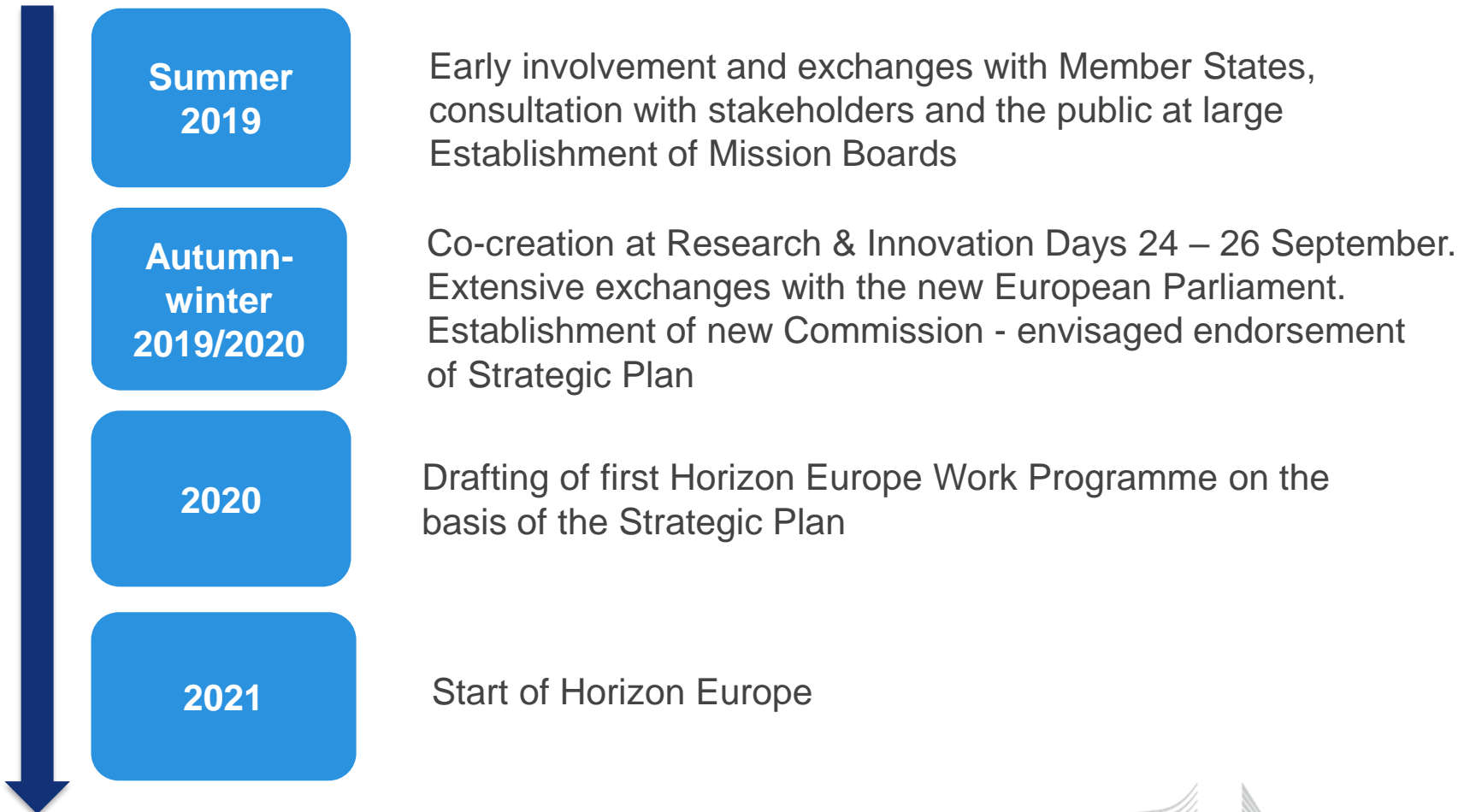
Main Features

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





Thank you!

#HorizonEU

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