

Horizon Europe

Keys of the EU Research and Innovation Framework Programme 2021-2027



ICER - Pro



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ENCARE - Enhancing Capacities of UAS staff for more successful EU funded Research
Project Number: 2023-1-DE01-KA220-HED-000153936



Agenda

- Introduction to Horizon Europe
- Strategic Plan
- Structure
- Introduction by Pillar
- Missions
- Partnerships



Horizon Europe

Horizon Europe is the **9th European Union Framework programme** for R&D&I

- Aligned to the Multiannual Financial Framework (2021-2027)
- Globally the most ambitious and biggest programme - €95.5 Bn

R&D&I is considered as a political instrument to achieve Europe's strategic objectives:

- Strengthening **Europe's scientific and technological bases**
- Solving **social and industrial problems**
- Boosting **employment, economic growth and investment**

This is reflected in the structure of Horizon Europe

Competitive funding programme:

- Keep Europe at the forefront of global R&I
- Create a common space for R&I
- Reinforce mobility of ideas, knowledge and people

fuel EU's **scientific and technological excellence** and the strengthen the European Research Area (ERA)

tackle policy priorities, including **green and digital transitions** and Sustainable Development Goals

boost Europe's **innovation uptake, competitiveness** and **jobs**

Science & Technology

Society

Economy



Horizon Europe Strategic Plan



Horizon Europe Strategic Plan

Strategic Priorities Horizon Europe

(Strategic Plan 2025-2027)

- Green Transition
- Digital Transition
- Society
- Open Strategic Autonomy
(overarching strategy)

Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations

Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment

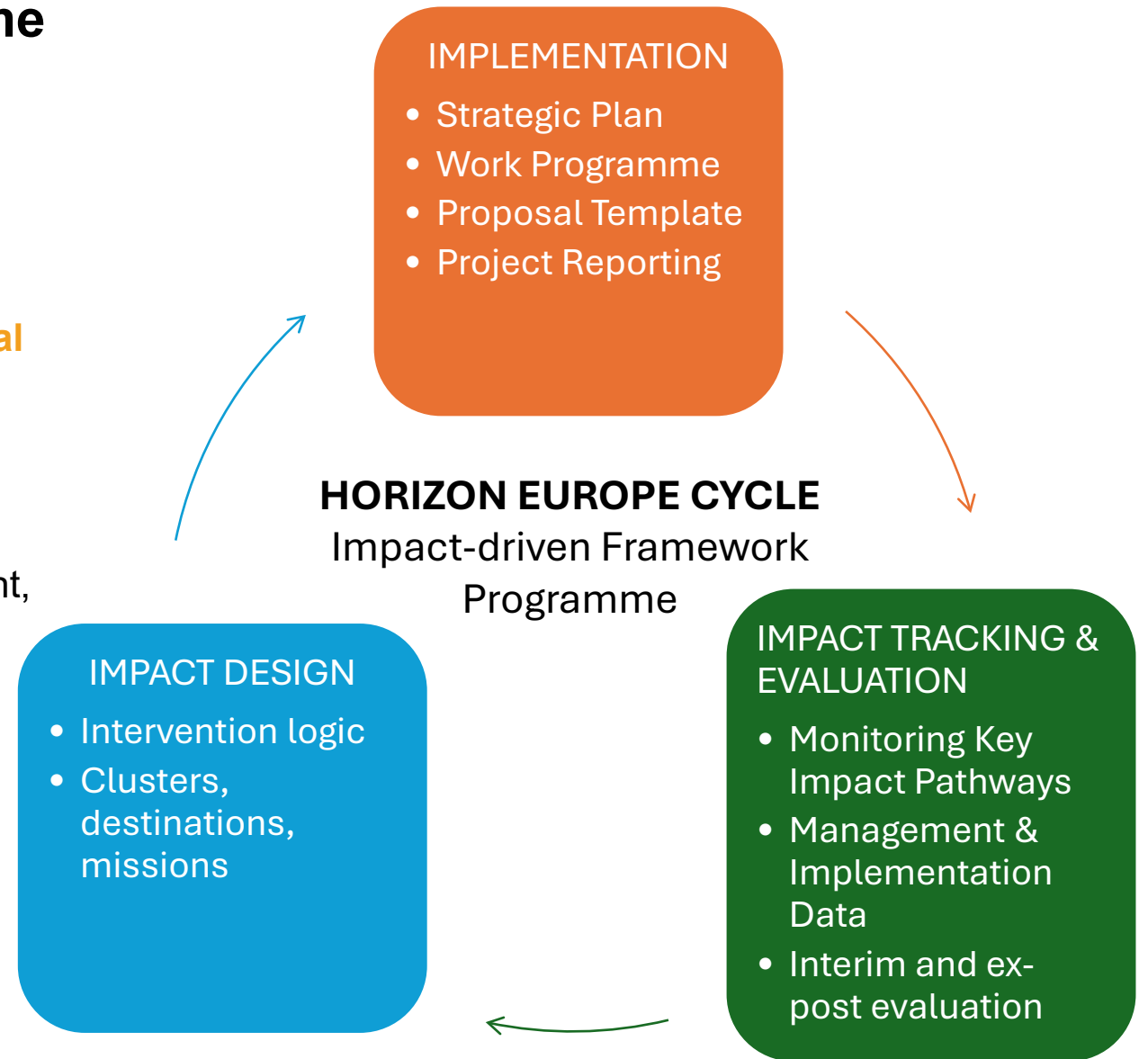
Making Europe the first digitally enabled circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems

Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

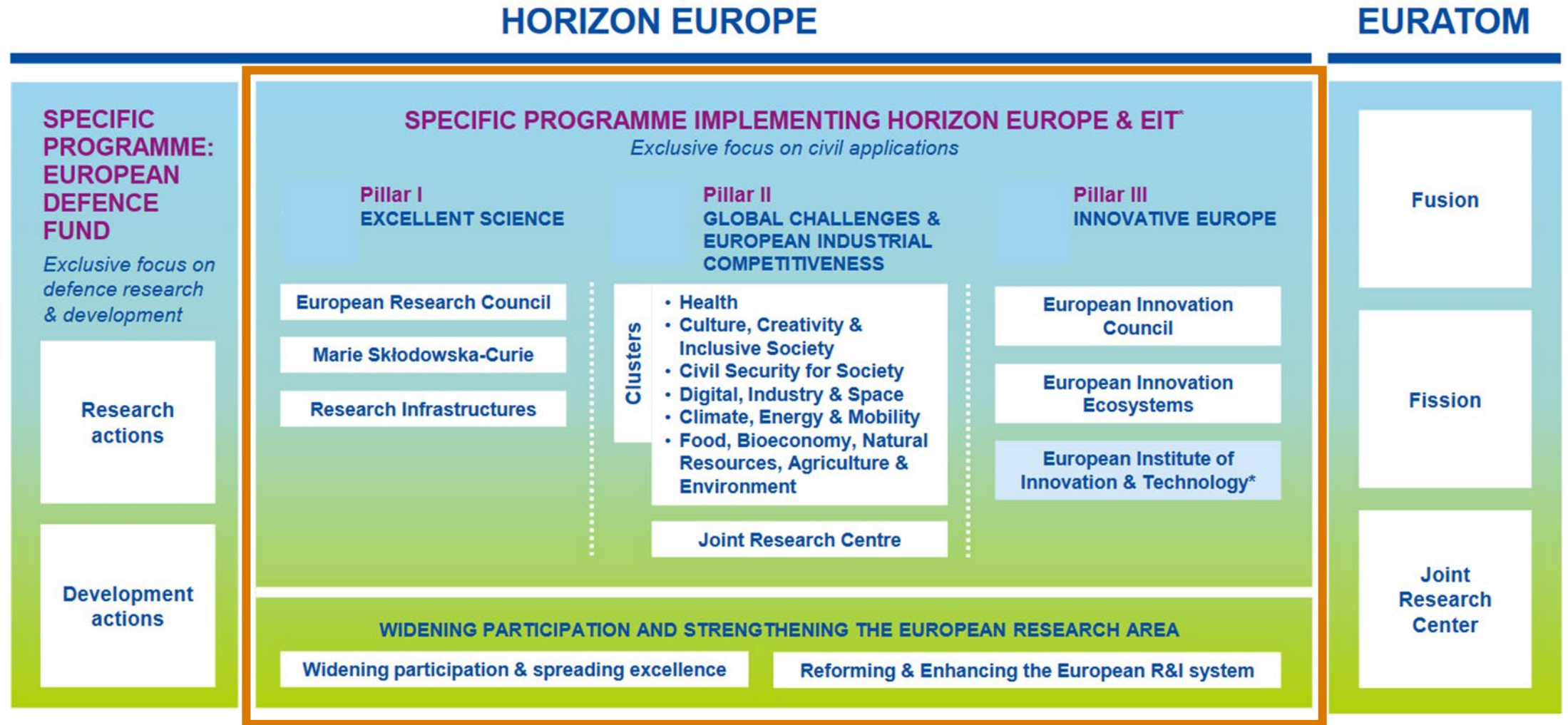


Impact driven Framework Programme

- Horizon Europe is designed as from the impact of research in relation to the European policies
 - **The project is a tool to achieve the political objectives → Pathway to impact**
- Strong **Political and European values** component, being crucial:
 - **Impact**
 - **Gender dimension**
 - **Open science**
 - **Do not significantly harm principle**



Horizon Europe Structure



* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme



Pillar 1 – Excellent Science

Objectives

- Strengthen excellent basic research and “pioneering research”
- Develop, retain and regain talent in the European Research Area
- Link and further develop existing research infrastructures throughout the European Research Area and provide transnational access to them

Reinforcing and Extending Excellence of EU's Science

The pillar consists of:

- **European Research Council (ERC)** – excellent fundamental research
- **Marie Skłodowska Curie Actions (MSCA)** – promote training and international mobility of researchers
- **Research infrastructures (RI)** – strengthen the quality and accessibility of research infrastructures



Pillar 1 – Excellent Science

European Research Council

Frontier research by the best researchers and their teams

€16 billion

Marie Skłodowska-Curie Actions

Equipping researchers with new knowledge and skills through mobility and training

€6.6 billion

Research Infrastructures

Integrated and inter-connected world-class research infrastructures

€2.4 billion



Pillar 1 – ERC

Starting Grants

- Up to €1.5M and 5 years
- Researchers with promising early-career
- 2-7 years of postdoc experience
- To develop their career and establish own team

Consolidator Grants

- Up to €2M for 5 years
- Excellent Researchers
- 7-12 years of postdoc experience
- To consolidate research team or programme

Advanced Grants

- Up to €2.5 M for 5 years
- Recognized Researchers
- Excellent scientific track record in the last 10 years
- To develop new and outstanding project

Synergy Grants

- Up to €10M for 6 years
- Tackling jointly ambitious challenges
- 2- 4 Researchers (one can be outside Europe)

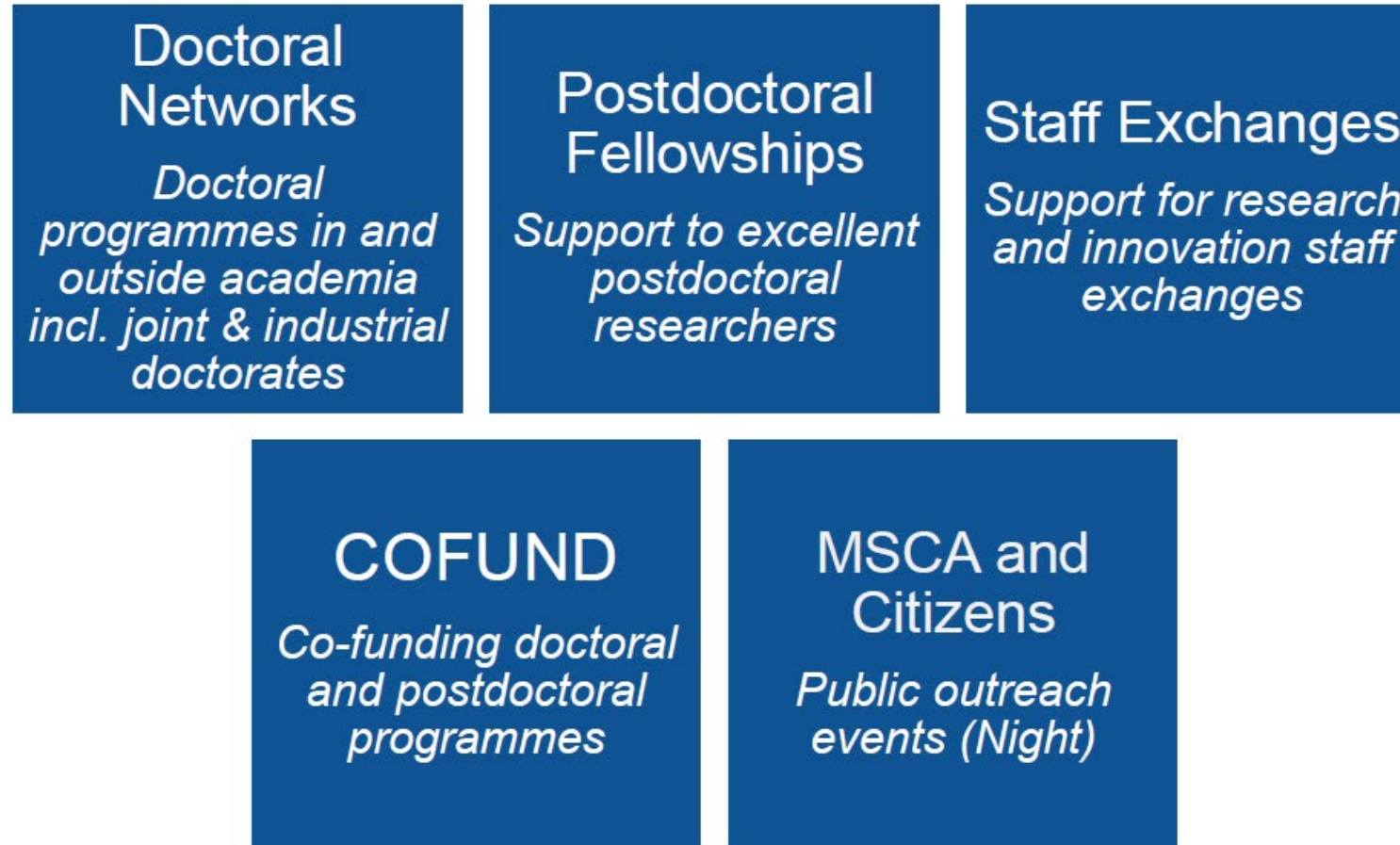
Proof of Concept

- €150.000 for 18 months
- For existing ERC grant holders who want to explore market potential of their ideas.

- ✓ Additional funding
- ✓ Extensions to the eligibility window



Pillar 1 – MSCA



Pillar 2 – Global Challenges and Industrial Competitiveness

Objectives:

- Boosting key technologies and solutions contributing to address global challenges, SGDs and the Paris Agreement on Climate Change
- Gaining knowledge through research funding
- Funding of all forms of innovation

Divided into 6 thematic **Clusters** – **Specific Work Programmes**

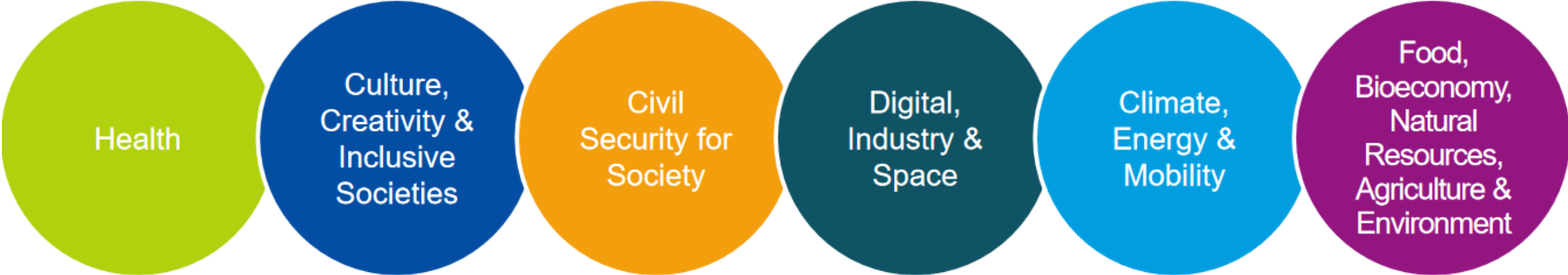
Further subdivided into **Destinations and Topics**

Strengthen impact of R&D in developing, supporting and implementing Union policies, and support uptake of innovative solutions to address global challenges



Pillar 2 – Global Challenges and Industrial Competitiveness

The clusters are:



€53.5 billion



Pillar 2 – 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



Horizon Europe - Missions

- Aligned to Pillar 2
- Novelty in Horizon Europe
- Aimed at **generating results with high impact**, understandable by citizens and linked to political/social priorities
- They publish their own work programme and calls for proposals

Cancer

- Improving the lives of more than 3 million people

Adaptation to climate change

- Make 150 cities and communities climate-resilient

Climate-neutral and smart cities

- Achieve 100 climate-neutrals and smart cities

Soil health and food

- Establish 100 living labs and lighthouses towards healthy soils

Restore our oceans and waters

- Protecting and restoring our oceans and waters through innovation and action



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Pillar 3 – Innovative Europe

Objectives

- Europe as a Pioneer in market-creating innovation and SME growth
- Development of the entire European innovation landscape
- Business integration, research, higher education and entrepreneurship

Stimulate market-creating breakthrough to strengthen competitiveness of the European Union

This pillar consists of:

- **European Innovation Council (EIC)** – identifying and supporting breakthrough technologies and innovations with the potential to scale up internationally
- **European Innovation Ecosystems** – building and strengthening innovation ecosystems and support the scaling of companies



Pillar 3 – Innovative Europe

European Innovation Council

Support to innovations with breakthrough and market creating potential

The budget: **€10.6 billion**, incl. up to **€527 million** for ecosystems (including NGEU – Recovery Fund parts dedicated to EIC).

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

circa €3 billion



Pillar 3 – EIC

Deep tech oriented – technology that is based on cutting-edge scientific advances and discoveries

- To meet real world needs (health, green and digital)
 - Supporting impact-oriented companies of which over 90% addressing SDGs

Three main funding schemes:

- **Pathfinder** to develop the scientific basis to underpin breakthrough technologies
- **Transition** to validate technologies and develop business plans for specific applications
- **Accelerator** to support companies (SMEs, start-ups, spin-outs and in exceptional cases small mid-caps) to bring their innovations to market and scale up



Pillar 3 – EIC

PATHFINDER

- From early technology to Proof-of-Concept (TRL1-4)
- Research scientific basis to underpin deep-tech
- Create/Disrupt new markets
- High risk- High gain

OPEN

- Collaborative, min 3 partners
- Up to €3M OPEN
- 100% funding, 36-48 months

Challenges

- Can be single partner (call)
- Up to €4M Challenges
- 100% funding, 36-48 months

TRANSITION

- Proof-of-Concept to Pre-Commercial (TRL3-4 to 5-6)
- Develop, Mature and Validate technology and business in application relevant environment
- Be ready for investment

- Single participant or small consortia, max 5 partners
- Build upon previous projects ([list](#) Pathfinder, FET, ERC-PoC, RIAs Pillar2...)
- Own the IPR
- From €0.5M to €2.5M
- This year only OPEN
- 100% funding, 12-36 months

ACCELERATOR

- From Pre-commercial to market and Scale-up (TRL 6-8)
- Support SMEs to develop new or disrupt existing markets

- Single start-up, spin-off or SME
- Or individuals planning to launch spin-off

- Short and full application +pitch
- Full application 2 DI/year
- Grant and Investment (EIC Fund)
- Grant up to €2.5M
- 70% funding, max 24 months
- Investment from €0.5M to €15M



Pillar 3 – EIC

Additional EIC services:

- **Business Acceleration Services (BAS):** it includes 12 days of coaching, allowing you to understand the industry better, fine-tune exploitation routes or refine your value proposition, among other things
- **Connect with EIC Community Platform:** it allows seeking for external funding and networking ([catalogue](#))
 - Includes the **EIC Tech to market programme** (entrepreneurship/venture building)
- **EIC Booster:** additional funding of €50k after ending the project
 - Focused on exploring potential avenues of exploitation
- **Fast Track Scheme for the Accelerator:** it allows you to apply directly to the full-stage application
 - Requires a positive assessment by the EIC of the market potential of the innovation



Widening & Strengthening the ERA

To strengthen the European Research Area (ERA), Horizon Europe uses various instruments via the horizontal pillar **Widening Participation and Strengthening the European Research Area**

Objectives

- Equality and an inclusive vision of Europe
- Reducing inequalities in the research and innovation sector within Europe
- Strengthening of links between R&I players across Europe

- Examples of these instruments are Teaming, Twinning and European Cooperation in Science and Technology (COST)



Widening & Strengthening the ERA

Widening Participation and Spreading Excellence

- Teaming, Twinning, ERA Chairs,
- European Cooperation in Science and Technology (COST)
- Boosting National Contact Points' (NCPs) activities, pre-proposal checks and advice
- Brain circulation
- Excellence initiatives:
- Possibility for entities from widening countries to join already selected collaborative R&I actions
- Recognition of participation
- Matchmaking services

€2.96 billion

Reforming and enhancing the EU R&I system

- Strengthening the evidence base for R&I policy
- Foresight
- Support for policy makers to the ERA development
- Support to national R&I policy reform, including Policy Support Facility
- Attractive researcher careers and links with higher education
- Open science, citizen science and science communication
- Gender equality
- Ethics and integrity
- Support to international cooperation
- Scientific input to other policies
- Support to the Programme implementation
- Support for National Contact Points
- Support to dissemination & exploitation

€0.44 billion



Partnerships

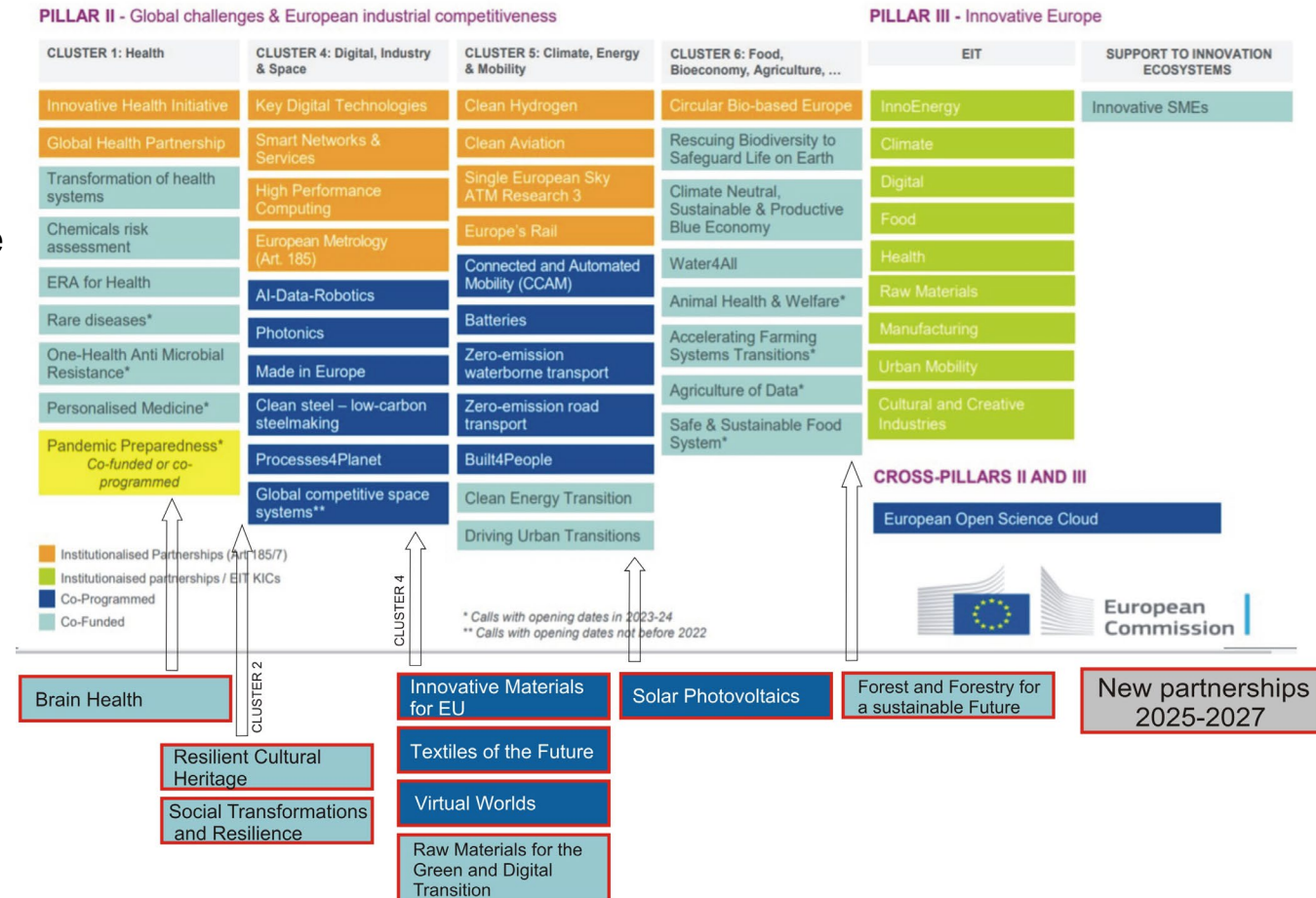
Response to ambitious and complex objectives that cannot be addressed through other types of projects

Facilitate a framework for collaboration at programme level between the EU and public – private partners

- Align partnerships with EU missions
- Achieve policy objectives effectively
- Encourage key actors to participate
- Join forces with common long-term vision
- Mobilise public and private investment

Currently 49 partnerships in HE

- 10 more to be included in 2025



Partnerships

Institutionalized

- Implemented by dedicated structures created for that purpose.
- Based on TFEU
- Members are mainly for profit entities
- Calls and WP do not appear in HE clusters
- Funding of projects do not always follow conventional methods
- e.g. CleanHydrogen

Co-Programmed

- Based on MOU or contractual agreements
- All type of members
- Funded by EC and public-private entities
- Managed within the WPs of the clusters
- In IAs lower funding rate for-profit (~60%).
- e.g. Procceses4Planet

Co-Funded

- Members are mainly co-funding agencies
- Members are responsible of the specific programme and calls
- Co-funding through member states
- Funding and rules may depend on the country
- e.g. Water4All



Thank You!

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Universitat Politècnica de València (UPV)

2025

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[CARPE Website](#)
(general project information & training material)

[LinkedIn](#)
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