

Horizon Europe: some notes

Francesco Taglino
CNR-IASI

Horizon Europe

Horizon Europe (HE) is the new **EU Framework Program**

- from **2021** until **2027**
- total budget of **€95.5 billion**.

Horizon Europe structure: Three pillars and one horizontal focus area

Ricerca di base

1

PILLAR 1

Excellent Science

- a) European Research Council
- b) Marie Skłodowska-Curie Actions
- c) Research Infrastructures

Ricerca applicata

2

PILLAR 2

Global Challenges and European Industrial Competitiveness

- a) Clusters:
 - Health
 - Culture, Creativity & Inclusive Society
 - Civil Security for Society
 - Digital, Industry & Space
 - Climate, Energy & Mobility
 - Food, Bioeconomy, Natural Resources, Agriculture & Environment
- b) Joint Research Centre

Iniziativa close to market

3

PILLAR 3

Innovative Europe

- a) European Innovation Council
- b) European Innovation Ecosystems
- c) European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area

- a) Widening Participation and Spreading Excellence
- b) Reforming and Enhancing the European R&I System

Mission-driven research

The HE program also aims to implement **mission-driven research** focusing on **five different missions**:

- Adaptation to climate change including societal transformation
- Cancer
- Climate-neutral and smart cities
- Healthy oceans, seas, coastal and inland waters
- Soil health and food

A mission is a set of **actions across multiple disciplines** with the aim of reaching a bold and inspirational goal **with high impact on society**, within a pre-set timeframe.

These missions will be addressed within the Global Challenges and European Industrial Competitiveness pillar (Pillar 2)

Pillar 1: Excellence 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 B€**).
- **Marie Skłodowska-Curie Actions**: equipping researches with new knowledge and skills through mobility and training (**6.8 B€**).
- **Research Infrastructures**: Integrated and inter-connected world-class research infrastructures (**2.4 B€**)

European Research Council

- **ERC Starting Grant:** for researcher with **2-7 year experience** after Phd (upto **1.5€M** for **5 years**)
- **ERC Consolidator Grants:** for researcher with **7-12 year experience** after Phd (upto **2€M** for **5 years**)
- **ERC Advanced Grants:** for **established research leaders** (upto **2.5€M** for **5 years**)
- **ERC Proof of Concept:** to explore commercial and societal potential of ERC projects (**150€K**)
- **ERC Synergy Grants:** for ambitious research questions that need 2-4 principal investigators (**10€M**).
- **Additional opportunities:** for researchers wishing to work or gain experience in an ERC's grantee's team.

All ERC funded projects at

<https://erc.europa.eu/projects-figures/project-database>

Marie Skłodowska-Curie Actions

- MSCA are the European Union's flagship funding programme for **doctoral education** and **postdoctoral training** (excellence, mobility, bottom-up and open to world research).
- **Doctoral Networks**: to implement doctoral programmes by partnerships of organisations from different sectors across Europe.
- **Postdoctoral Fellowships (PF)**: for research moving within Europe (European PF) or outside Europe (Global PF)
- **Staff Exchange**: sustainable collaborative projects between different organisations from the academic and non-academic sectors (SMEs)
- **COFUND**: regional, national, and international initiatives (doctoral and postdoctoral)
- **MSCA and citizens**: to bring research and researchers closer to the public at large (European Researcher's Night)

Research Infrastructures

Research infrastructures are facilities that provide **resources and services** for the research communities to conduct research and foster innovation:

- major equipment or sets of instruments
- knowledge-related facilities such as collections,
- archives or scientific data infrastructures
- computing systems
- communication networks

Pillar 2: Global Challenges and European Industrial Competitiveness

Boosting **key technologies** and solutions underpinning **EU policies** and **sustainable development goals**.

- **7 Clusters** on specific societal challenges (**52.7 €B**):
 - Digital, Industry & Space
 - Civil Security for Society
 - Health
 - Food, Bioeconomy, Natural Resources, Agriculture & Environment
 - Culture, Creativity and Inclusive Societies
 - Climate, Energy and Mobility
- **Joint Research Centre**: to support EU and national policy makers

Types of actions under Pillar 2

- **Research and Innovation actions (RIA):** Interdisciplinary projects that usually include applied research. The funding rate for all participants is 100%.
- **Innovation actions (IA):** Interdisciplinary projects focused on bringing a pre-existing concept or innovation closer to practical application on market or in society. The funding rate is 100% for non-profit entities, and 70% for other participants.
- **Coordination and support actions (CSA):** Support activities e.g., establishing networks or platforms or mapping existing knowledge on a certain topic. Such project does not aim at funding research as such. However, participation might result in successful applications for research projects in the future. Again, the funding rate is 100% for all participants.

Pillar 3: Innovation Europe

Stimulating **market-creating breakthroughs** and ecosystems conducive to innovation.

- **European Innovation Council:** Support to innovations with breakthrough and market creating potential. **10.5 €B**
- **European innovation ecosystems:** Connecting with regional and national innovation actors.
- **European Institute of Innovation and Technology:** Bringing key actors (research, education and business) together around a common goal for nurturing innovation **(3.0 €B)**

European Innovation Council

EIC Pathfinder: to support early-stage technologies (R&D stage, TRL levels 1-4) with the potential to change the respective scientific disciplines and be exploited to create new markets - Academia, and Industry or SMEs (**max 3.0 €M**).

EIC Transition: from results of a previous project, e.g., an EIC Pathfinder, FET or ERC Proof of Concept to a mature technology (TRL 5-6) and business idea - SMEs, spin-offs, universities (**max 2.5 €M**).

EIC Accelerator: supports SMEs to scale-up and develop high risk/high impact innovations - single SMEs and start-ups.

European innovation ecosystems

The EU aims to create more connected and efficient innovation ecosystems to support the scaling of companies, encourage innovation and stimulate cooperation among national, regional and local innovation actors.

European Institute of Innovation & Technology (EIT)

The EIT is an **independent body** of the EU set up in 2008 to deliver innovation across Europe.

The EIT brings together leading business, education and research organisations to form **dynamic cross-border partnerships** (Innovation Communities) each dedicated to find solutions to a specific global challenge.

EIT Innovation Communities **develop** innovative products and services, **start** new companies, and **train** a new generation of entrepreneurs.

Widening Participation and Strengthening the European Research Area

Optimising strengths & potential for a more innovative Europe.

- **Widening participation and Spreading Excellence:** contribute to building research and innovation capacity for countries lagging behind
 - Support centres of excellence
 - Establish ecosystems
 - Enhance capacity to access research networks
 - Attract talents
 - Improve skill of researchers.
- **Reforming and enhancing the European R&I system:** policy reforms at national level will be mutually reinforced and complemented through the development of EU-level policy initiatives, research, networking, partnering, coordination, data collection and monitoring and evaluation.

Additional info

Each 2-3 years the work programme is updated and new calls are launched (the current version covers until end of 2022)

New versions of the work programme are presented in conferences organized by the European Commission

Infodays organized by or with the support of the EC to address a specific call, or a group of somehow related calls

If you are interested in a call, search for these events and participate to them in order to further understand what the call is actually asking.

Search for ...

a call

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search>

an event

https://research-and-innovation.ec.europa.eu/events_en