



HORIZON EUROPE

THE EU RESEARCH & INNOVATION PROGRAMME 2021 – 27



This presentation is based on the political agreement of 11 December 2020 on the Horizon Europe. Information on some parts is pending revision.

19 March 2021

HORIZON EUROPE

EURATOM


SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND
Exclusive focus on defence research & development

Research actions

Development actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*
Exclusive focus on civil applications

**Pillar I
EXCELLENT SCIENCE**




European Research Council

Marie Skłodowska-Curie

Research Infrastructures

**Pillar II
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS**




Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre

**Pillar III
INNOVATIVE EUROPE**



European Innovation Council

European Innovation Ecosystems

European Institute of Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

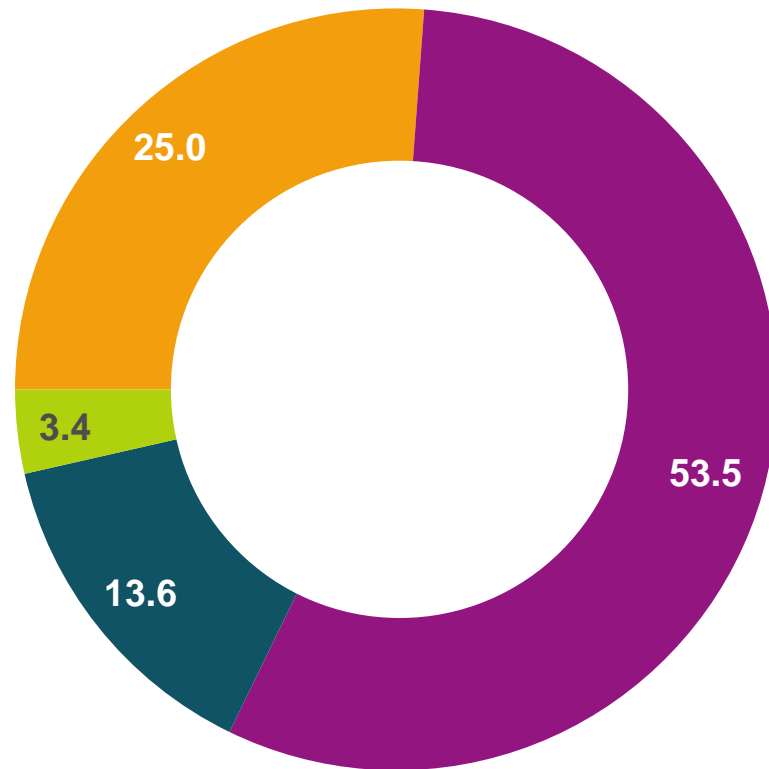
Fission

Joint Research Center

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

Horizon Europe Budget: €95.5 billion (2021-2027)

(including €5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)



Political agreement December 2020

€ billion in current prices

- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA



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 researchers and innovators create markets of the future, leverage private finance, scale up their companies**
- **Innovation centric, risk taking & agile, pro-active management and follow up**
- **Mostly 'bottom up', but also targeting strategic challenges**
- **EIC Programme Managers to develop visions for breakthroughs and steer portfolios**

Complementary instruments bridging the gap from idea to market

PATHFINDER

R&I grants
(from early technology
to proof of concept)

TRANSITION

R&I grants
(proof of concept to
pre-commercial)

ACCELERATOR

**Grants & investment (via EIC Fund) for
single SMEs & start-ups**
(from pre-commercial to market & scale-up)



EU 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 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, but may also benefit from actions carried out within other parts of the Programme as well as complementary actions carried out under other Union programmes.

Five Missions Areas



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



Cancer



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



**Climate-neutral
& smart cities**



**Soil health &
food**



New approach to European Partnerships

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

Key Features

- **Strategic orientation**
- **Systemic approach**
- **Simple architecture and toolbox**
- **Common set of criteria for the life-cycle**

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 Art 185/187 of TFEU and the EIT legal acts for 2021-2027



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

Association to Horizon Europe

- Third countries with good capacity in science, technology and innovation
- Taking into account objective of driving economic growth in Europe through innovation
- Intensified targeted actions
- Strengthened support to multilateral cooperation
- Openness to international participation balanced with the promotion of EU strategic autonomy



Open Science across the programme

Open
Science

Mainstreaming of open science practices for improved quality and efficiency of R&I, and active engagement of society

Mandatory immediate Open Access to publications: beneficiaries must retain sufficient IPRs to comply with open access requirements;

Data sharing as 'open as possible, as closed as necessary': mandatory Data Management Plan for FAIR (Findable, Accessible, Interoperable, Reusable) research data

- Work Programmes may incentivize or oblige to adhere to **open science practices** such as involvement of citizens, or to use the **European Open Science Cloud**
- Assessment of open science practices through the **award criteria** for proposal evaluation
- Dedicated support to **open science policy actions**
- **Open Research Europe** publishing platform

Horizon Europe Stats



14190 SIGNED GRANTS

- Out of 82481 eligible proposals
- Success rate: 21.76%



36.25 B€ EU CONTRIBUTION

- Largest contribution for the Project Partnership for the Assessment of Risks from Chemicals (PARC, 200 M€)



87908 PARTICIPATIONS

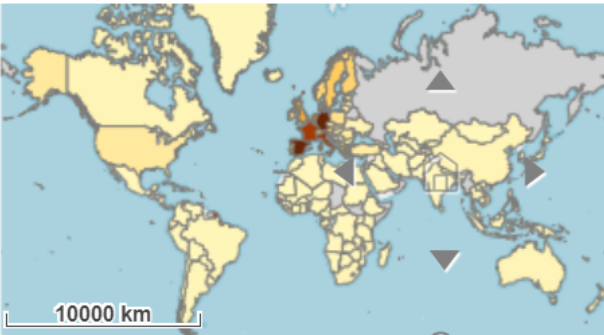
- 25135 participants
- 16794 SME Participations

Horizon Europe – State of Play

Key Figures

Programme	Select map level	Country	Country Group
36,25B	14.190	87.908	20,31%
Funding received by the project's	Number of grant agreements signed,	Number of organisations involved	Ratio of the retained applications to the total
		25.135	82.481
		Number of unique organisations involved	Proposals that have not failed at the eligibility or admissibility
			431.495
			Number of organisations applying for HORIZON EUROPE

Please select a country

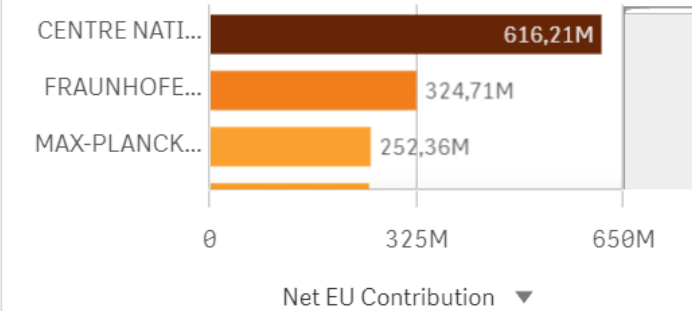


Participation by region (NUTS 3)

Region (NUTS 3)	Participation
Totals	87908
Not Available	5002
Paris	2211

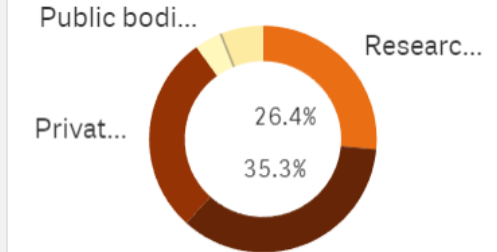
The filters are available only for country and NUTS levels.

Top organisations



Types of organisations

Based on the net EU Contribution



The designations employed and the presentation of material on the map do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or areas or of its authorities, or concerning the delimitation of its frontiers or boundaries.

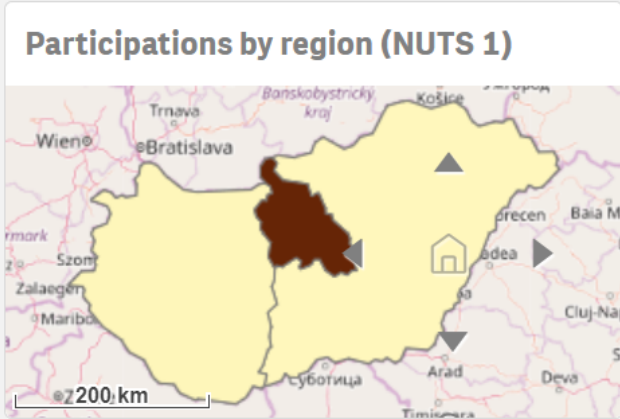
ERC Principal Investigators 3 579	EIC Participation 3 659	MSCA Participation 17 840	Experts 28 458
Net EU contribution to ERC P... 5,69B	Seal of Excellence 5.659	MSCA unique participants 6.235	Proposals evaluated per exp... 14,83

More data: See [Horizon Dashboard](#)

Horizon Europe – State of Play - Hungary

Key Figures - Hungary

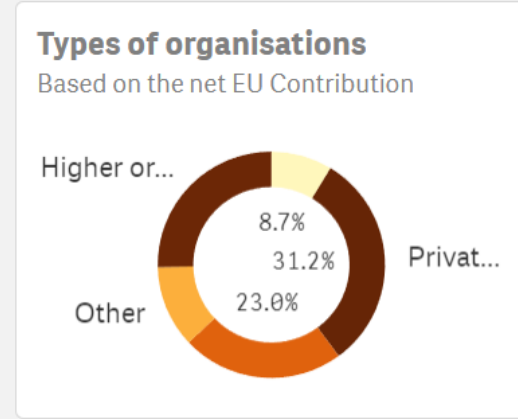
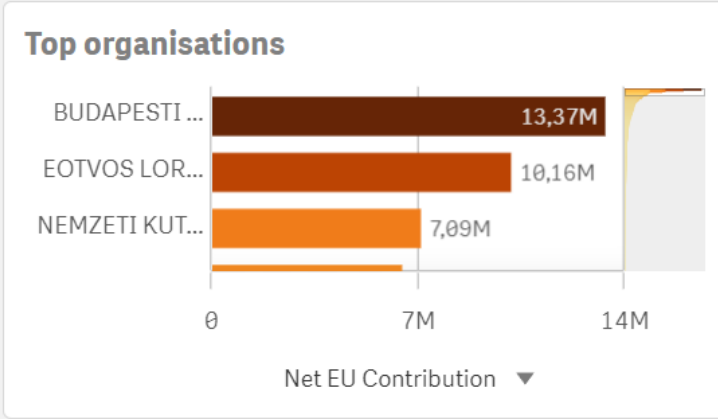
Programme	Select map level	Country	Country Group
168,8M	505	675	18,86%
Funding received by the project's	Number of grant agreements signed,	Number of organisations involved	Ratio of the retained applications to the total
		254	2.564
			3.653
			Number of organisations applying for HORIZON EUROPE



Participation by region (NUTS 3)

Region (NUTS 3)	Participation
Totals	675
Budapest	495

The filters are available only for country and NUTS levels.



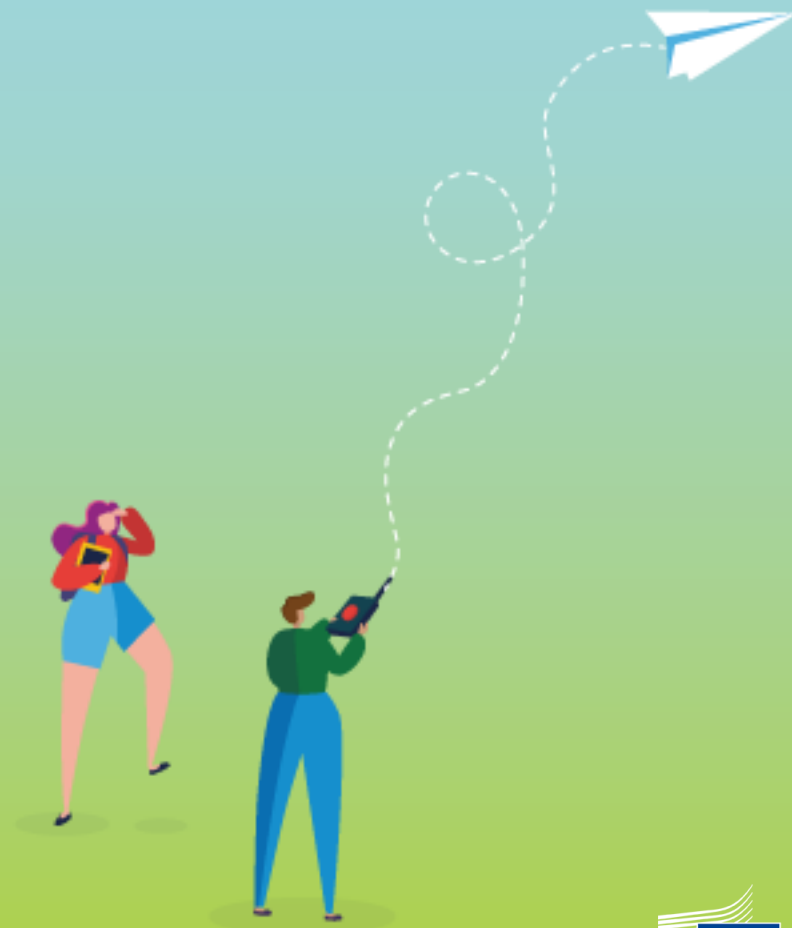
The designations employed and the presentation of material on the map do not imply the expression of any opinion whatsoever on the part of the European Union concerning the legal status of any country, territory or areas or of its authorities, or concerning the delimitation of its frontiers or boundaries.

ERC Principal Investigators 13	EIC Participation 21	MSCA Participation 97	Experts 371
Net EU contribution to ERC P... 24,05M	Seal of Excellence 19	MSCA unique participants 47	Proposals evaluated per exp... 17,67

More data: See [Horizon Dashboard](#)

HORIZON EUROPE

In detail



Pillar I

EXCELLENT 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 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



European Research Council

Competitive funding to support investigator-driven frontier research across all fields, on the basis of scientific excellence.

Funding



10,000+
Projects funded
since 2007



Over 70% of completed
ERC projects led to
breakthroughs or major
advances (according to
independent studies)



7 Nobel Prizes, 4 Fields
Medals, hundreds of
important prizes awarded
to ERC grantees



80+
Nationalities
(ERC grantees)



Starting Grant: up to €1.5 million. Duration: up to 5 years. 2-7 years of experience since completion of PhD.



Consolidator Grant: up to €2 million. Duration: up to 5 years. 7-12 years of experience since completion of PhD.



Advanced Grant: up to €2.5 million. Duration: up to 5 years. An excellent scientific track record of recognized achievements in the last 10 years.



Synergy Grant: 2-4 researchers (one can be based outside Europe). Up to a maximum of €10 million for a period of 6 years.

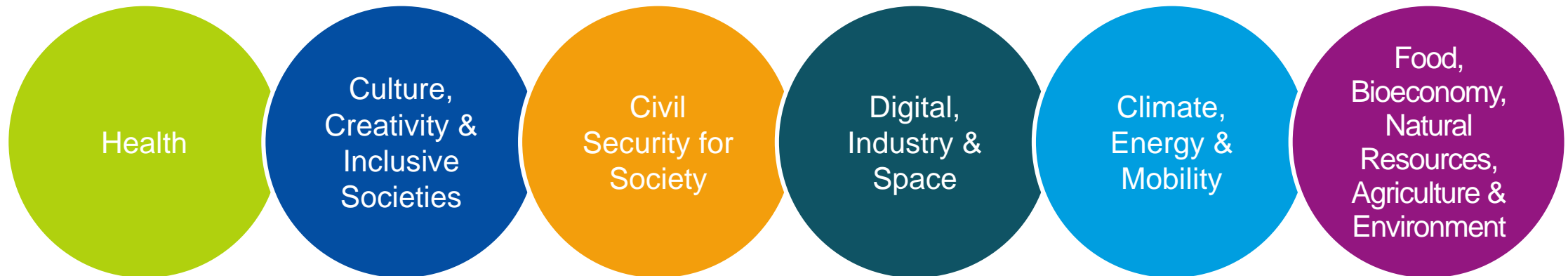
“The expertise that we gathered in cancer trials encouraged us to extend the use of mRNA vaccines towards the prevention of infectious diseases. Groundbreaking innovation requires decades of research and contributions from multiple research frontiers until it reaches maturity to provide benefit for humanity.”

ERC Grantee Uğur Şahin, Mainz University

Pillar II - Clusters

GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS:

boosting **key technologies** and solutions underpinning **EU policies & Sustainable Development Goals** (6 clusters and JRC – non-nuclear direct actions)



€53.5 billion

Pillar II

Budget for clusters & for JRC

in current prices

Cluster 1	Health	€8.246 billion (including €1.35 billion from NGEU)
Cluster 2	Culture, Creativity & Inclusive Societies	€2.280 billion
Cluster 3	Civil Security for Society	€1.596 billion
Cluster 4	Digital, Industry & Space	€15.349 billion (including €1.35 billion from NGEU)
Cluster 5	Climate, Energy & Mobility	€15.123 billion (including €1.35 billion from NGEU)
Cluster 6	Food, Bioeconomy, Natural Resources, Agriculture & Environment	€8.952 billion
	JRC (non-nuclear direct actions)	€1.970 billion

Clusters are including a budget for Partnerships and Missions
NGEU is Next Generation EU programme – Recovery Fund

Pillar III

INNOVATIVE EUROPE:

stimulating **market-creating breakthroughs** and **ecosystems** conducive to innovation

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**

Part

Widening Participation & Strengthening the European Research Area (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

EURATOM research and training programme (2021-2025)

Objective

Research and training activities to reduce risks in nuclear safety and security, 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

Budget for years 2021-27

€1.981 billion

About the Horizon Europe Work Programmes

Horizon Europe supports research and innovation especially through Work Programmes, which set out funding opportunities for research and innovation activities.

The 'main' Work Programme covers the following components of Horizon Europe:

- Marie Skłodowska-Curie actions and research infrastructures (Pillar I);
- all clusters (Pillar II);
- the European innovation ecosystems (Pillar III);
- widening participation and spreading excellence, and reforming and enhancing the European R&I system (Widening Participation and Strengthening the European Research Area part).

The 'main' Work Programme for 2021-2022 is made up of 13 parts:

- the introduction;
- 11 parts covering the components mentioned above (including one on missions);
- and one on the general annexes, which set out rules which apply across the Work Programme such as the standard admissibility conditions and eligibility criteria, selection and award criteria, etc.

About the Horizon Europe Work Programmes

Separate Work Programmes cover:

- the European Research Council (ERC)
- the Joint Research Centre (JRC)
- the European Innovation Council (EIC)

The activities of the EIT are set out in separate programming documents. In addition, a significant part of Pillar II of Horizon Europe will be implemented through institutionalised partnerships, particularly in the areas of Mobility, Energy, Digital and Bio-based economy, which will have their separate Work Programmes.

Horizon Europe is also implemented through the other Specific Programme (the European Defence Fund) and is complemented by the Euratom Research and Training Programme (each having a separate Work Programme).

Strategic Plan 2025-27

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HORIZON EUROPE



Impact, flexibility, co-design



Horizon Europe legislation defines three types of impact tracked through **Key Impact Pathways**





The pathway to impact

Logical steps towards the achievement of the expected impacts of the project over time, in particular beyond the duration of a project.

A pathway begins with the projects' results, to their dissemination, exploitation and communication, contributing to the expected outcomes in the work programme topic, and ultimately to the wider scientific, economic and societal impacts of the work programme destination.

The EU defines in the WP:

- Expected impact in Destinations (wider long term expected effects)
- Expected outcome in Topics (expected effects over the medium term)

Participants in the proposal:

- Read carefully expected outcome and impact in topics and destination
- Describe expected project's results
- Propose measures to maximise impact through dissemination and exploitation of results
- Describe the contribution the project can make to the expected outcomes and impacts set out in the Work Programme

Link between policy priorities and project results

Strategic Planning and Programming
(EC)
STRATEGIC PLAN
WORK PROGRAMME

EU POLICY PRIORITIES	Overall priorities of the European Union (Green Deal, Fit for the Digital Age,...)
KEY STRATEGIC ORIENTATIONS	Set of strategic objectives within the EC policy priorities where R&I investments are expected to make a difference
IMPACT AREAS	Group of expected impacts highlighting the most important transformation to be fostered through R&I
EXPECTED IMPACTS = DESTINATIONS	Wider long term effects on society (including the environment), the economy and science, enabled by the outcomes of R&I investments (long term). It refers to the specific contribution of the project to the work programme expected impacts described in the destination. Impacts generally occur some time after the end of the project.
EXPECTED OUTCOMES = TOPICS	The expected effects, over the medium term, of projects supported under a given topic. The results of a project should contribute to these outcomes, fostered in particular by the dissemination and exploitation measures. This may include the uptake, diffusion, deployment, and/or use of the project's results by direct target groups. Outcomes generally occur during or shortly after the end of the project.
PROJECT RESULTS	What is generated during the project implementation. This may include, for example, know-how, innovative solutions, algorithms, proof of feasibility, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks, etc. Most project results (inventions, scientific works, etc.) are 'Intellectual Property', which may, if appropriate, be protected by formal 'Intellectual Property Rights'

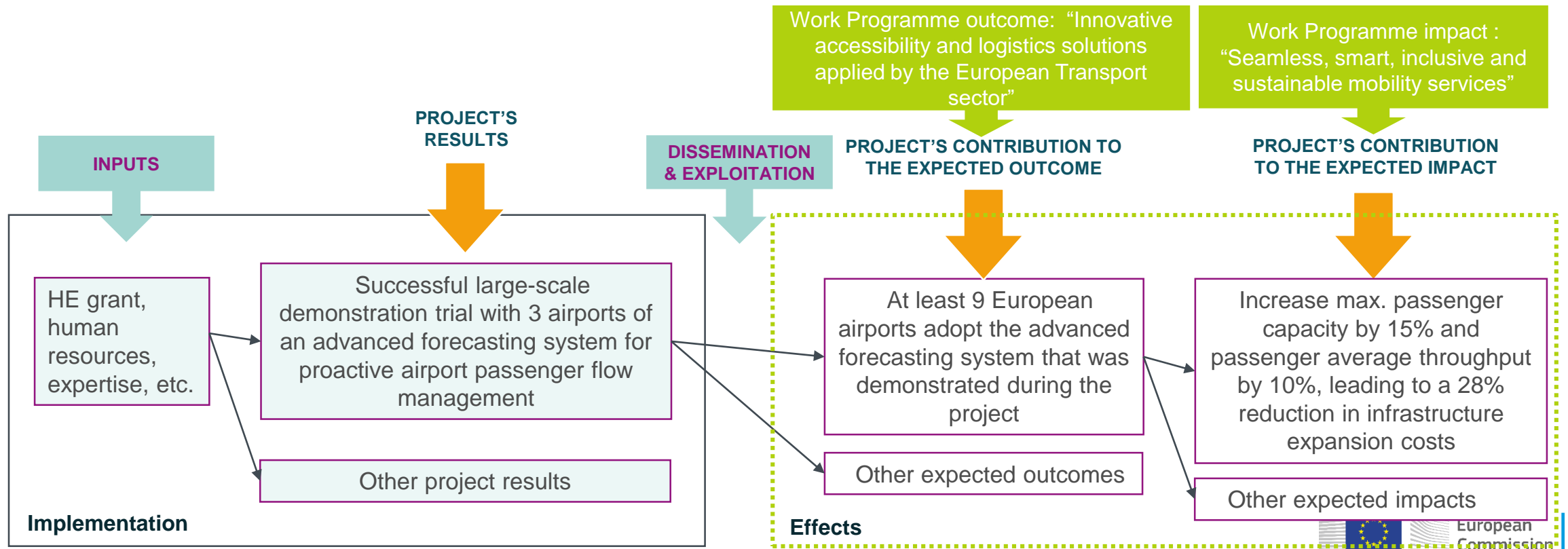
PROJECT PROPOSALS
Application process (researchers)



Describing the impact of your proposal

Project's pathway towards impact

...by thinking about the specific contribution the project can make to the expected outcomes and impacts set out in the Work Programme.





Measures to maximise impact

Dissemination, exploitation and communication

To include a draft plan in proposal is an admissibility condition, unless the work programme topic explicitly states otherwise.

All measures should be **proportionate** to the scale of the project, and should contain **concrete actions** to be implemented both **during and after** the end of the project

Elements of the D&E&C plan

- **Planned measures** to maximise the impact of projects
- **Target groups** (e.g. scientific community, end users, financial actors, public at large) and **proposed channels** to interact
- **Communication measures** for promoting the project and its findings throughout the full lifespan of the project
- **Policy feedback** measures to contribute to policy shaping and supporting the implementation of new policy initiatives and decisions
- Follow-up plan to foster **exploitation/uptake** of the results
 - Comprehensive and feasible strategy for the **management of the intellectual property** (the provision of a results ownership list is mandatory at the end of the project)
 - If exploitation is expected primarily in non-associated third countries, give a convincing justification that this is still in the Union's interest.

HORIZON EUROPE –THE STRATEGIC PLAN 2025-2027



Simplified key strategic orientations

Key Strategic Orientation A

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

Key Strategic Orientation B

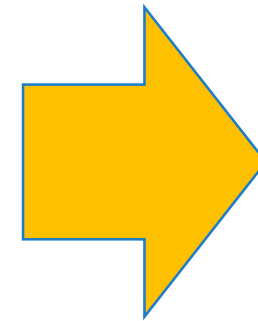
Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources to ensure food security and a clean and healthy environment

Key Strategic Orientation C

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

Key Strategic Orientation D

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

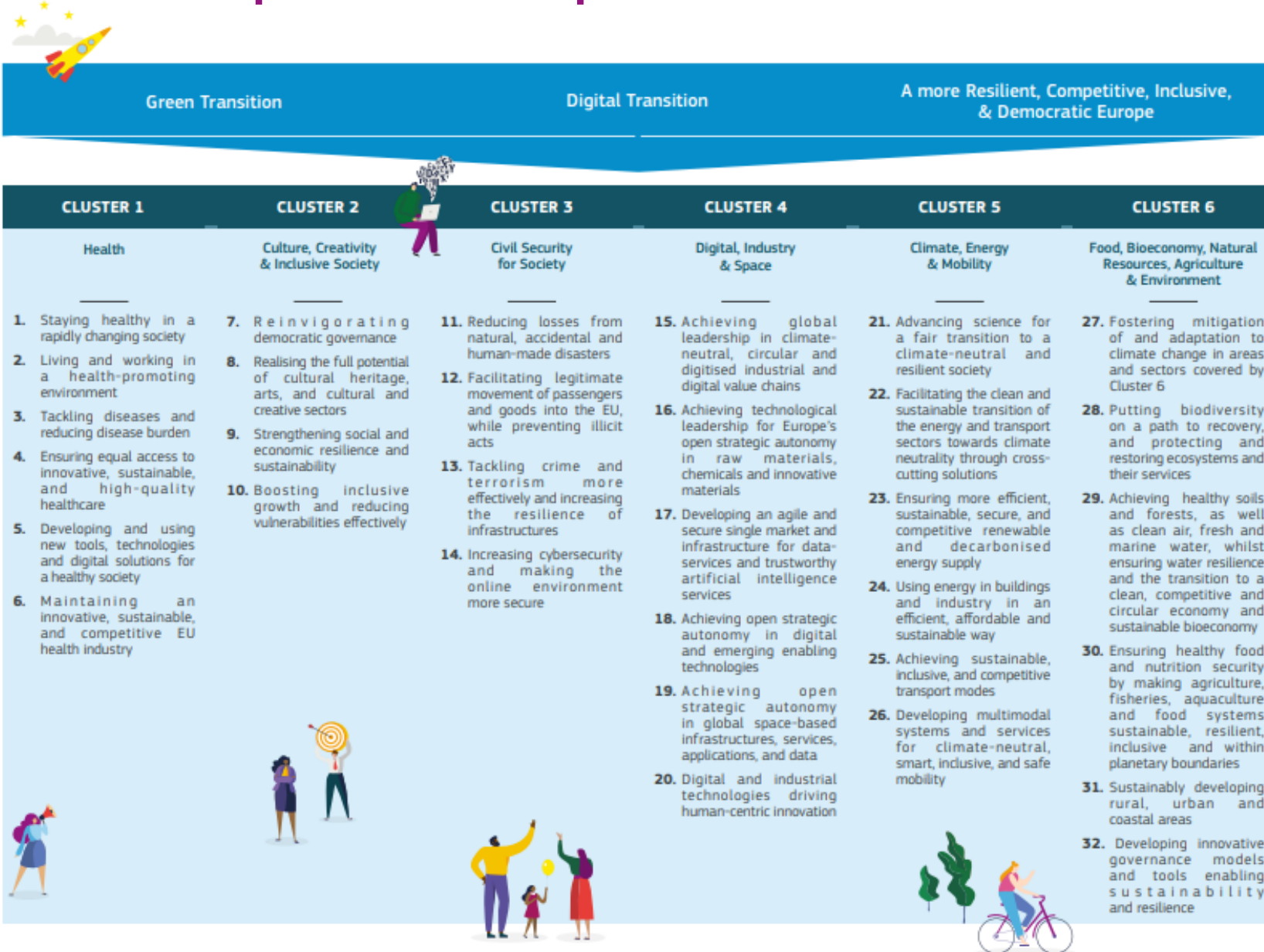


Green transition

Digital transition

A more resilient, competitive, democratic and inclusive Europe

Simplified expected impacts



2nd set of European Partnerships: Overview

Title	Envisioned implementation mode	Cluster
Brain Health	Co-funded	1
Forests and Forestry for a Sustainable Future	Co-funded	6
Innovative Materials for EU (I'M for EU)	Co-programmed	4
Raw Materials for the Green and Digital Transition	Co-funded	4
Resilient Cultural Heritage	Co-funded	2
Social Transformations and Resilience	Co-funded	2
Solar Photovoltaics	Co-programmed	5
Textiles of the future	Co-programmed	4
Virtual Worlds	Co-programmed	4



Thank you!

#HorizonEU

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