

“Матриця можливостей” нової Програми Європейського союзу “Горизонт Європа”

Horizon Europe

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

#HorizonEU

Based on the Commission Proposal for Horizon Europe, the common understanding between co-legislators and the Partial General Approach, both approved in April 2019



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1. Introduction General Characteristics

1.a) Our vision

A sustainable, fair and **prosperous** future for **people** and **planet** based on European values.

- Tackling **climate change** (35 % budgetary target)
- Helping to achieve **Sustainable Development Goals**
- Boosting the Union's **competitiveness and growth**



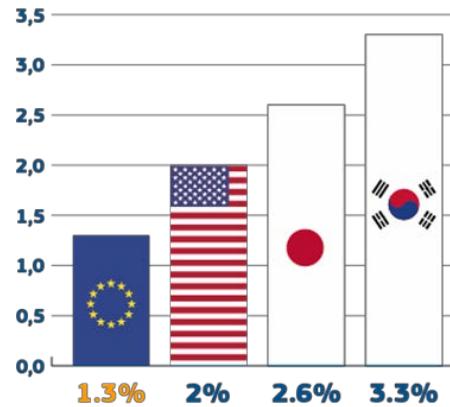
Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

General Characteristics

1.b) While benefiting from world-class research and strong industries...

Our knowledge and skills are our main resources.

- 7% of the world's population
- 20% of global R&D
- 13 of all high-quality scientific publications



1.3%
EU business
R&D
investment



...Europe can do better at transforming this into leadership in innovation and entrepreneurship

1.c) Europe can shape its future through research and innovation

- Focusing research and innovation on the **ecological, social and economic transitions** and related societal challenges
- Leveraging Europe's scientific strengths into **leadership in breakthrough and disruptive innovation**
- Setting **ambitious goals** for issues that affect us daily, such as skills development, the fight against cancer, harmful emissions, and the state of the oceans, including plastics
- Focusing on **cutting-edge research and innovation** projects spanning from research and innovation to deployment

1.d) Horizon Europe

The ambitious EU research and innovation framework programme (2021-2027)



to strengthen the EU's scientific and technological bases and the European Research Area (ERA)



to boost Europe's innovation capacity, competitiveness and jobs

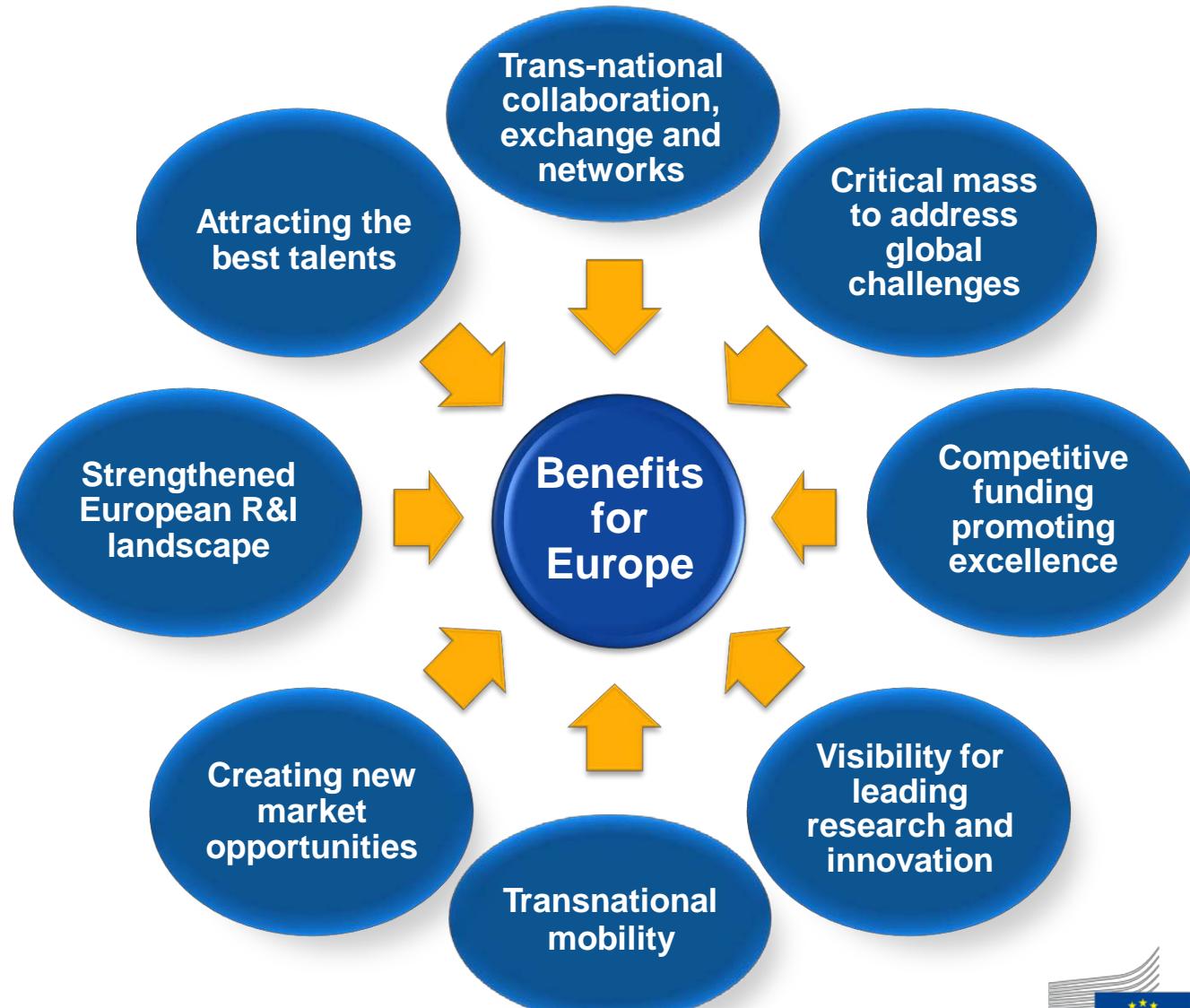


to deliver on citizens' priorities and sustain our socio-economic model and values

The Commission proposes a budget of € 100 billion for Horizon Europe.

General Characteristics

1.e) Added value through Horizon Europe :



2. «Horizon Europe» Preliminary structure



Pillar 1 Excellent Science

European Research Council

Marie Skłodowska-Curie
Actions

Research Infrastructures



Pillar 2

Global Challenges and
European Industrial
Competitiveness

Clusters

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

Joint Research Centre



Pillar 3 Innovative Europe

European Innovation Council

European innovation
ecosystems

European Institute of
Innovation
and Technology

Widening Participation and Strengthening the European Research Area

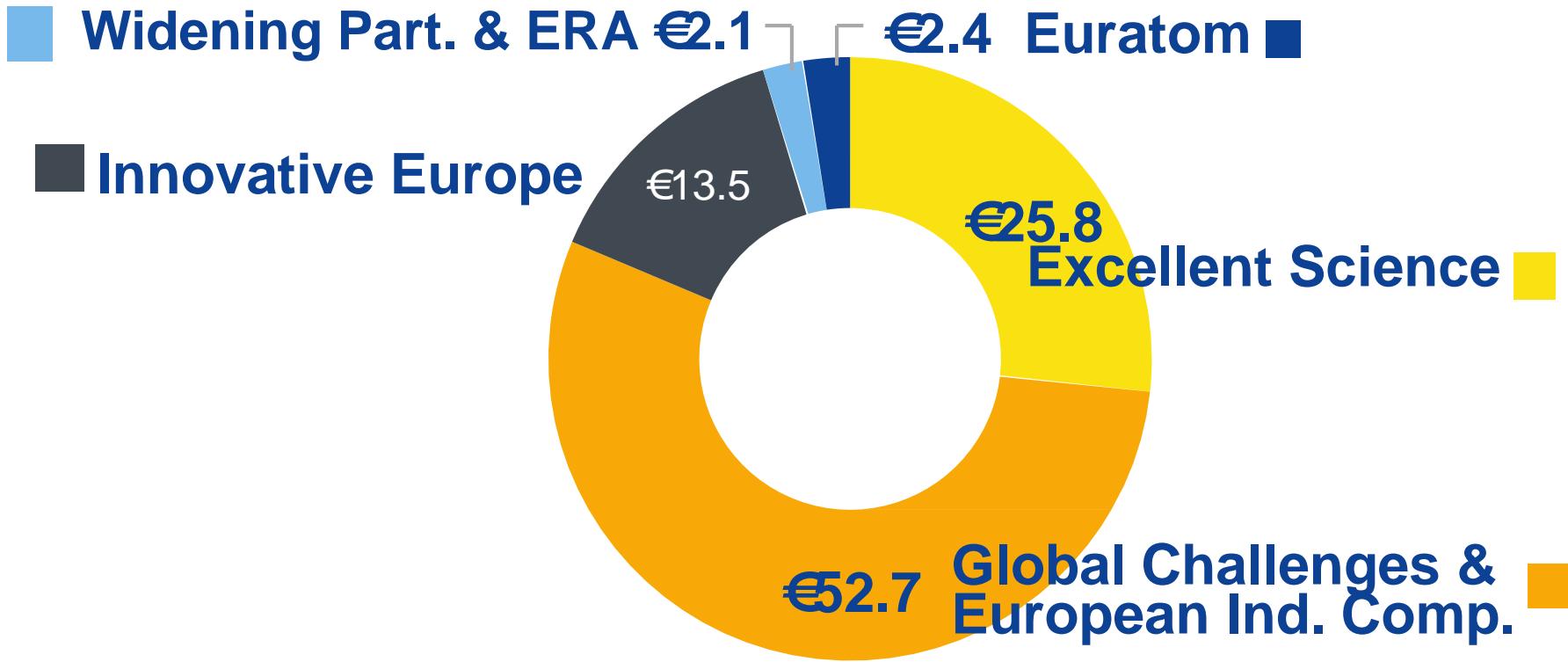
Widening participation and spreading excellence

Reforming and Enhancing the European R&I system



European
Commission

3. Commission proposal for budget: €100 billion* (2021-2027) in current prices



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

4. Three Pillars :

4.1. Pillar 1 : Excellent Science

Reinforcing and extending the excellence of the Union's science base

4.1.1. European Research Council

Commission proposal:
€ 16.6 billion

- Frontier research by the best researchers and their teams

4.1.2. Marie Skłodowska-Curie Actions

Commission proposal:
€ 6.8 billion

- Equipping researchers with new knowledge and skills through mobility and training

4.1.3. Research Infrastructures

Commission proposal:
€ 2.4 billion

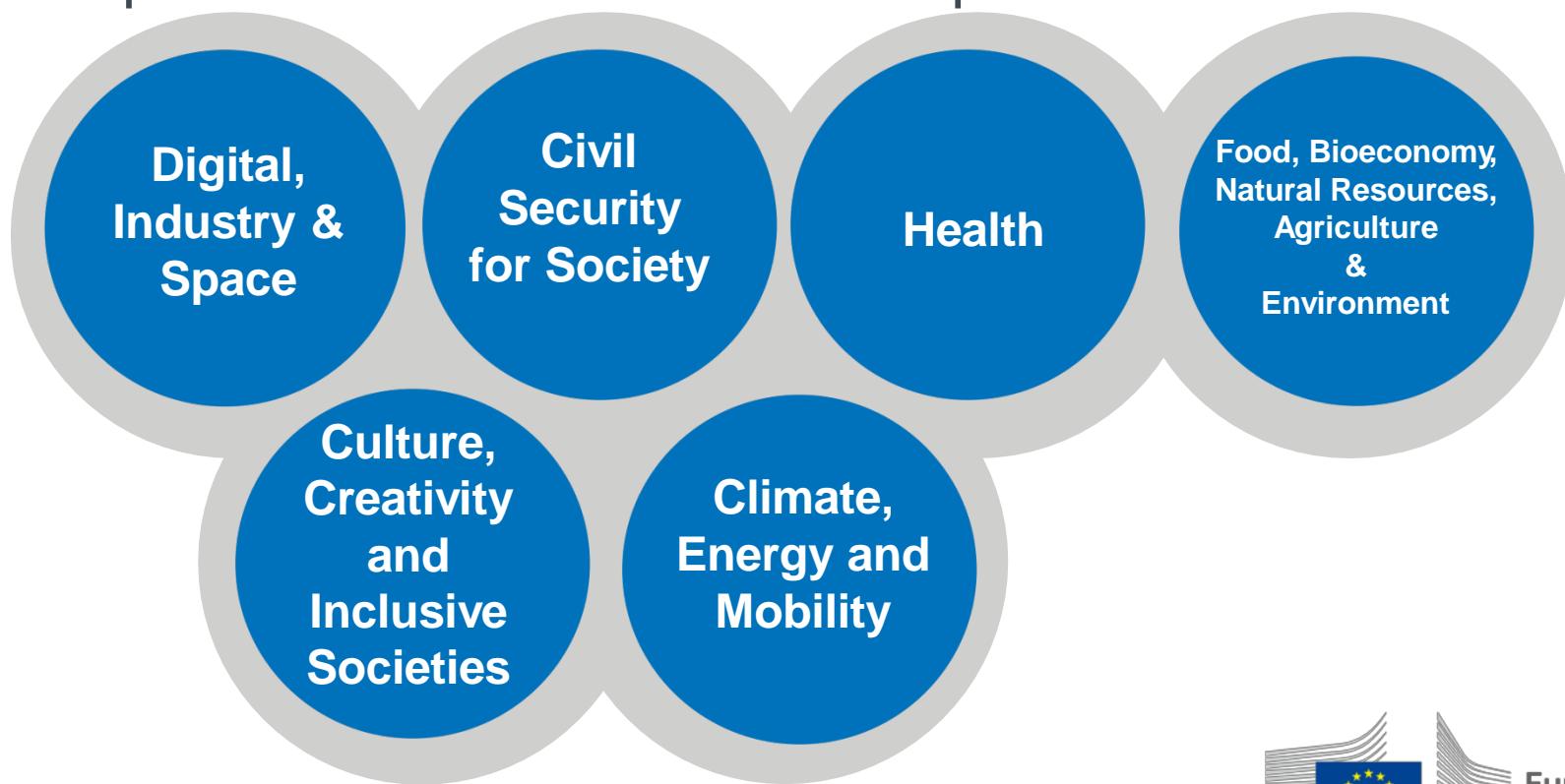
- Integrated and interconnected world-class research infrastructures

4.2. Pillar 2 - Clusters

Global Challenges & European Industrial Competitiveness

Commission proposal for budget: €52.7 billion.

Boosting key technologies and solutions underpinning
EU policies & Sustainable Development Goals



Кластер	Галузі діяльності
Здоров'я	<ul style="list-style-type: none"> • Охорона здоров'я протягом життя • Неінфекційні та рідкісні захворювання • Інструменти, технології та цифрові рішення для охорони здоров'я, включаючи персоніфіковану медицину • Екологічні та соціальні визначники здоров'я • Інфекційні захворювання, включаючи ті, що пов'язані із бідністю та зневажливими захворюваннями • Системи охорони здоров'я
Культура, креативність та інклюзивне суспільство	<ul style="list-style-type: none"> • Демократія та влада • Соціальні та економічні трансформації • Культура, культурна спадщина та креативність
Цифрова безпека для суспільства	<ul style="list-style-type: none"> • Суспільства, стійкі до стихійних лих • Захист та безпека • Кібербезпека

<p>Цифрові технології, промисловість та космос</p>	<ul style="list-style-type: none"> • Промислові технології • Передові матеріали • Інтернет наступного покоління • Кругова промисловість • Космос, включаючи спостереження за Землею • Нові сприяючі технології • Ключові цифрові технології, включаючи квантові технології • Штучний інтелект та робототехніка • Передові обчислення та великі дані • Низьковуглецева та чиста промисловість
<p>Клімат, енергетика та мобільність</p>	<ul style="list-style-type: none"> • Наука про клімат та кліматичні рішення • Енергетичні системи та мережі • Суспільство та міста • Промислова конкурентоспроможність у транспортній галузі • Розумна мобільність • Забезпечення енергією • Будинки та промислові об'єкти в умовах енергетичного переходу • Чистий, безпечний та доступний транспорт • Енергетичні сховища

Харчування, біоекономіка, природні ресурси, сільське господарство та навколишнє середовище

- Спостереження за навколишнім середовищем
- Сільська господарство, лісове господарство та сільська місцевість
- Кругові системи
- Системи харчування
- Біологічне розмаїття та природні ресурси
- Моря, океани та внутрішні води
- Біоекономічні інноваційні системи в Європі

Clusters in 'Global Challenges and European 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

4.3.Pillar 3 - Innovative Europe

Stimulating market-creating breakthroughs and ecosystems conducive to innovation

**Commission proposal: €10.5 billion,
incl. up to €500 million for ecosystems**

4.3.1. European Innovation Council

- Support to innovations with breakthrough and market creating potential

4.3.2. European Innovation ecosystems

- Connecting with regional and national innovation actors

Commission proposal: €3 billion

4.3.3. European Institute of Innovation and Technology (EIT)

- Bringing key actors (research, education and business) together around a common goal for nurturing innovation

5. Widening Participation and Strengthening the European Research Area

Optimising strengths & potential for a more innovative Europe

5.1. Widening Participation and Spreading Excellence, e.g.

- Teaming & twinning
- ERA Chairs
- COST
- Support to NCPs
- Brain circulation and excellence initiatives
- “Hop-on”

Common understanding: At least 3.3 % of Horizon Europe budget

5.2. Reforming and enhancing the European R&I system

- Scientific evidence & foresight
- Open Science
- Policy Support Facility
- Attractive researcher careers
- Citizen science, Responsible Research & Innovation
- Gender equality

6. Euratom research and training programme (2021-2025)

Commission proposal for budget: € 2.4 billion (2021-2027)

6.1. Objective

Research and training activities to reduce nuclear safety and security risks, development of safe nuclear technologies and optimal radiation protection.

6.2. Key novelties

- 6.2.1.** Increased focus on non-power applications of radiation (medical, industrial, space)
- 6.2.2.** Opening mobility opportunities for nuclear researchers through inclusion in Marie Skłodowska-Curie Actions
- 6.2.3.** Simplification: Specific objectives from currently 14 to 4, covering both direct actions (implemented by JRC) and indirect actions

7. InvestEU for Research and Innovation (R&I)

Stimulates more investment in research and innovation, notably by the private sector; leverages and complements national/regional initiatives

No market distortion: intervention only to address financing gaps in the R&I delivery chain (notably due to high risk)

Support through:

- **InvestEU Fund**
- **InvestEU Assistance**
- **InvestEU Portal**

Leverages an estimated **€200 bn** of investments into R&I; **market-based finance** for the exploitation and scale-up of European R&I

8. Programme Services



8.1. 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)

8.1.1. Definition :

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

8.1.2. Two complementary instruments - bridging the gap from idea to investable project

8.1.2.1.

Pathfinder:
grants (from
early
technology to
pre-
commercial)

8.1.2.2.

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



8.2. R&I Missions :

8.2.1. Definition :

What are 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 (drawing on inputs from other pillars)

8.2.2.Definition :

Mission areas

Adaptation to climate change, including societal transformation

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



**Climate-neutral
and smart cities**



Cancer



**Soil health
and food**



8.3. New approach to European Partnerships

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

8.3.1. Definition : key features

- Simple architecture and toolbox
- Coherent life-cycle approach
- Strategic orientation

8.3.2. Co-programmed

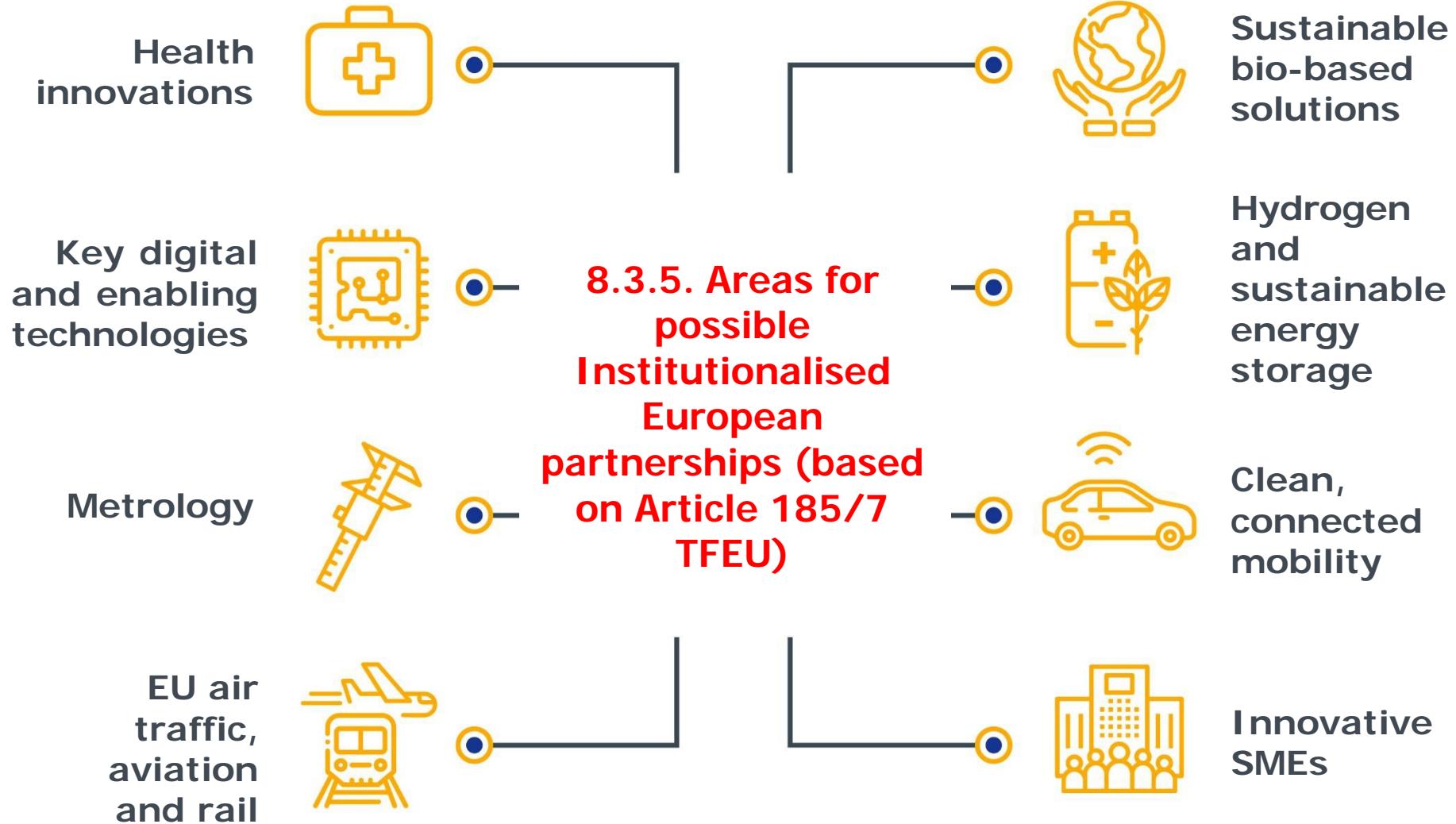
Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

8.3.3. Co-funded

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

8.3.4. 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





8.4. International Cooperation

8.4.1. Definition : International Cooperation

Tackling together global societal challenges; access to the world's best talents, expertise and resources; enhanced supply and demand of innovative solutions

8.4.2. Extended openness to association

8.4.2.1. Third countries with good capacity in science, technology and innovation

8.4.2.2. Taking into account objective of driving economic growth in Europe through innovation

8.4.3. General opening for international participation

8.4.4. Intensified targeted actions (flagship initiatives, joint calls, etc.)



8.5. Open Science across the Programme

8.5.1. Definition : Open Science

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

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

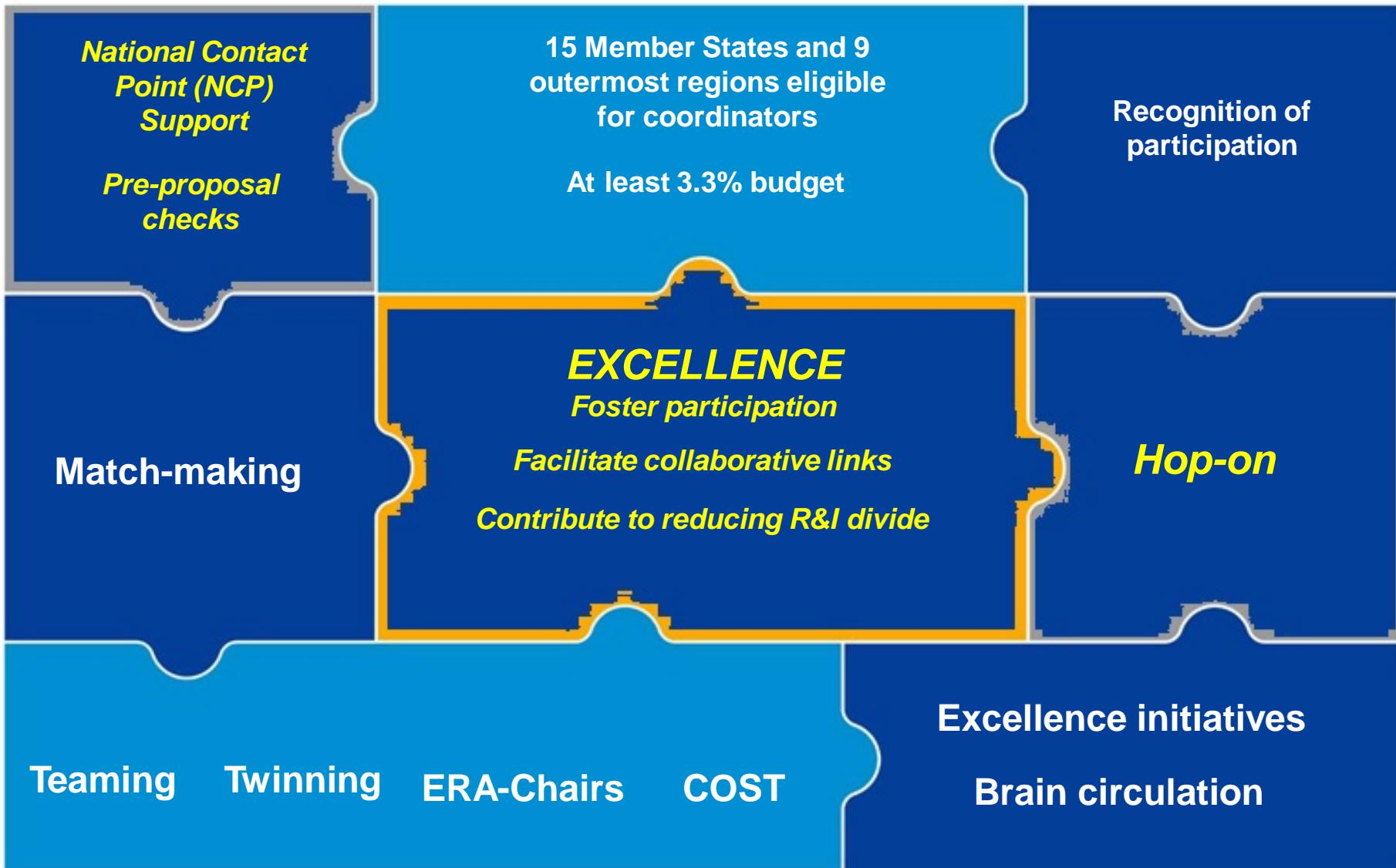
8.5.3. Open Access to research data ensured: in line with the principle "as open as possible, as closed as necessary"; Mandatory Data Management Plan for FAIR (Findable, Accessible, Interoperable, Re-usable) and Open Research Data

- Support to researcher skills and reward systems for open science
- Use of European Open Science Cloud

9. Conclusion Remarks.



9.1. Widening participation and spreading excellence





9.2. Commission proposal for synergies with other Union programmes

Erasmus — https://ec.europa.eu/programmes/erasmus-plus/node_en

Maritime &
Fisheries Fund — https://ec.europa.eu/fisheries/cfp/emff_en

Connecting
Europe
Facility — <https://ec.europa.eu/inea/en/connecting-europe-facility>

Digital
Europe — <https://ec.europa.eu/digital-single-market/en/news/digital-europe-programme-proposed-eu92-billion-funding-2021-2027>

Space
Programme — <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/space>

Innovation
Fund — https://ec.europa.eu/clima/policies/innovation-fund_en

InvestEU — https://europa.eu/investeu/home_en



9.2. Commission proposal for synergies with other Union programmes

ERDF — https://ec.europa.eu/regional_policy/en/funding/erdf/

LIFE — <https://ec.europa.eu/easme/en/life>

Common Agricultural Policy — https://ec.europa.eu/info/food-farming-fisheries/key-policies/common-agricultural-policy/cap-glance_en

Internal Security Fund — https://ec.europa.eu/home-affairs/financing/fundings/security-and-safeguarding-liberties/internal-security-fund-police_en

ESF+ — <https://ec.europa.eu/esf/main.jsp?catId=62&langId=en>

Single Market Programme — https://ec.europa.eu/growth/single-market_en

External Instrument — https://ec.europa.eu/fpi/home_en



9.3. Follow us and keep up to date via:

#HorizonEU

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<https://www.facebook.com/EUScienceInnov/>

<https://www.facebook.com/cmoedas/>



Horizon Europe dedicated website

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

European Innovation Council

<http://ec.europa.eu/research/eic>

EU budget for the future

http://ec.europa.eu/budget/mff/index_en.cfm

**Good Luck
for future
participants !**

#HorizonEU

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

