

# Horizon Europe

## The next EU Research & Innovation Programme (2021-2027)

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- *11 october 2018 – FCH2JU*

# 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

# Horizon Europe – Why?



# Horizon Europe: investing in R&I to shape our future

- The vision:  
" a Europe that protects,  
a Europe that empowers,  
a Europe that defends"  
*Jean-Claude Juncker*
- Tackling **climate change**  
(35 % budgetary target)
- Helping to achieve **Sustainable Development Goals**
- Boosting the Union's  
**competitiveness and growth**

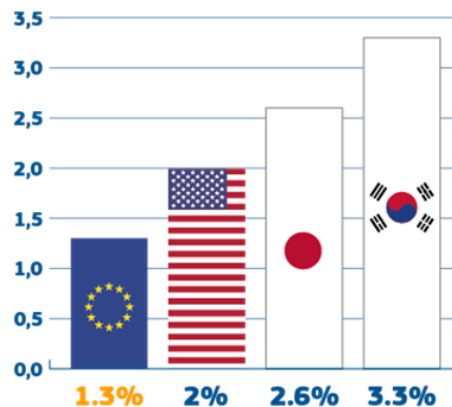


Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

# 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
- 1/3 of all high-quality scientific publications



1.3%  
EU business  
R&D investment

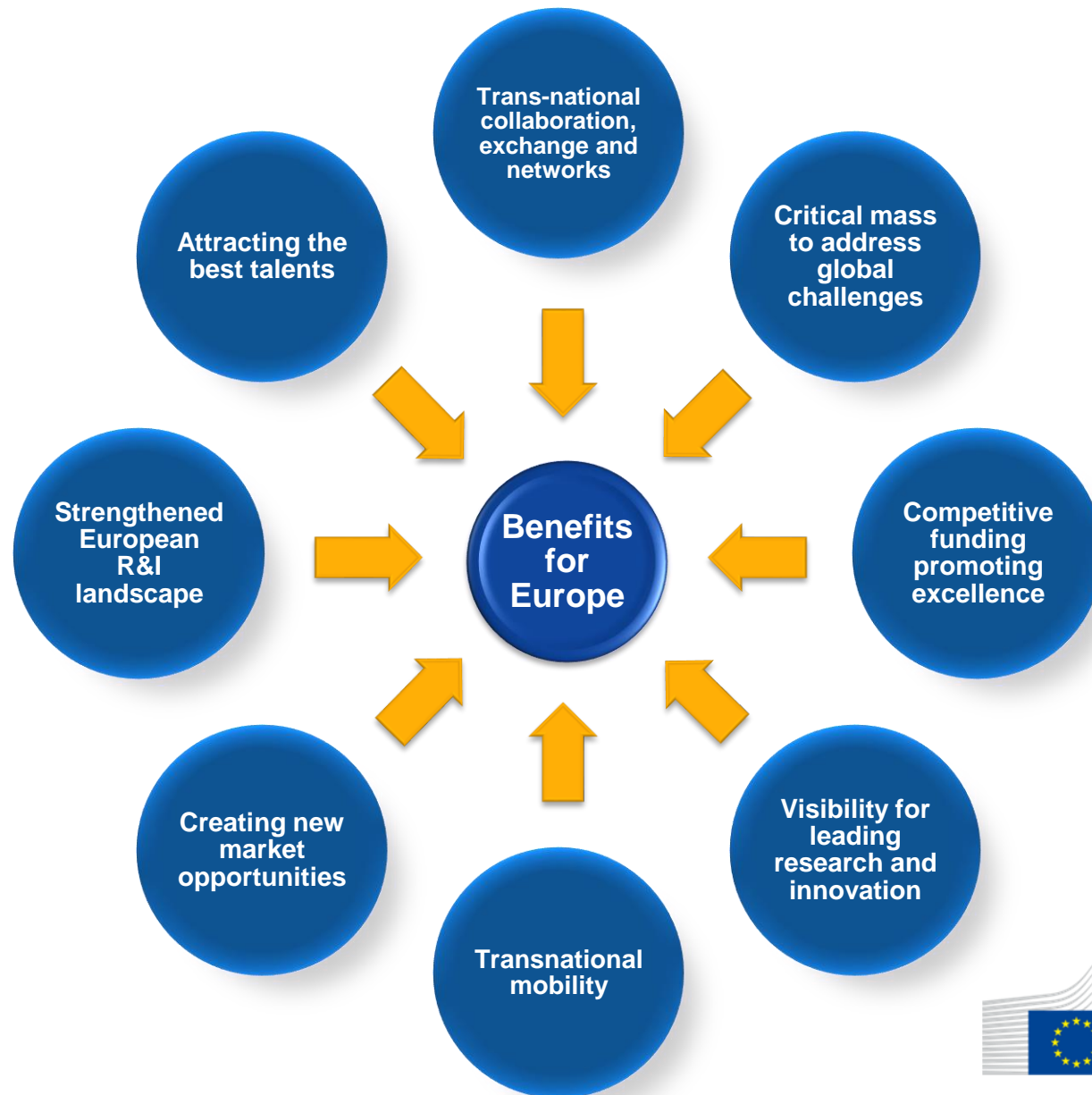
...Europe fails to transform leadership in science into leadership in innovation and entrepreneurship

# We need a new level ambition and a renewed R&I agenda to be in pole position

- Ensuring essential investment and stimulating private investment
- Making regulatory frameworks fit for innovation
- Becoming a front runner in market-creating innovation
- Reconnecting R&I with citizens through EU-wide R&I missions
- Supporting the dissemination of innovation throughout the Union
- Investing in skills and empower universities to become more entrepreneurial and interdisciplinary



# Added value through Horizon Europe:

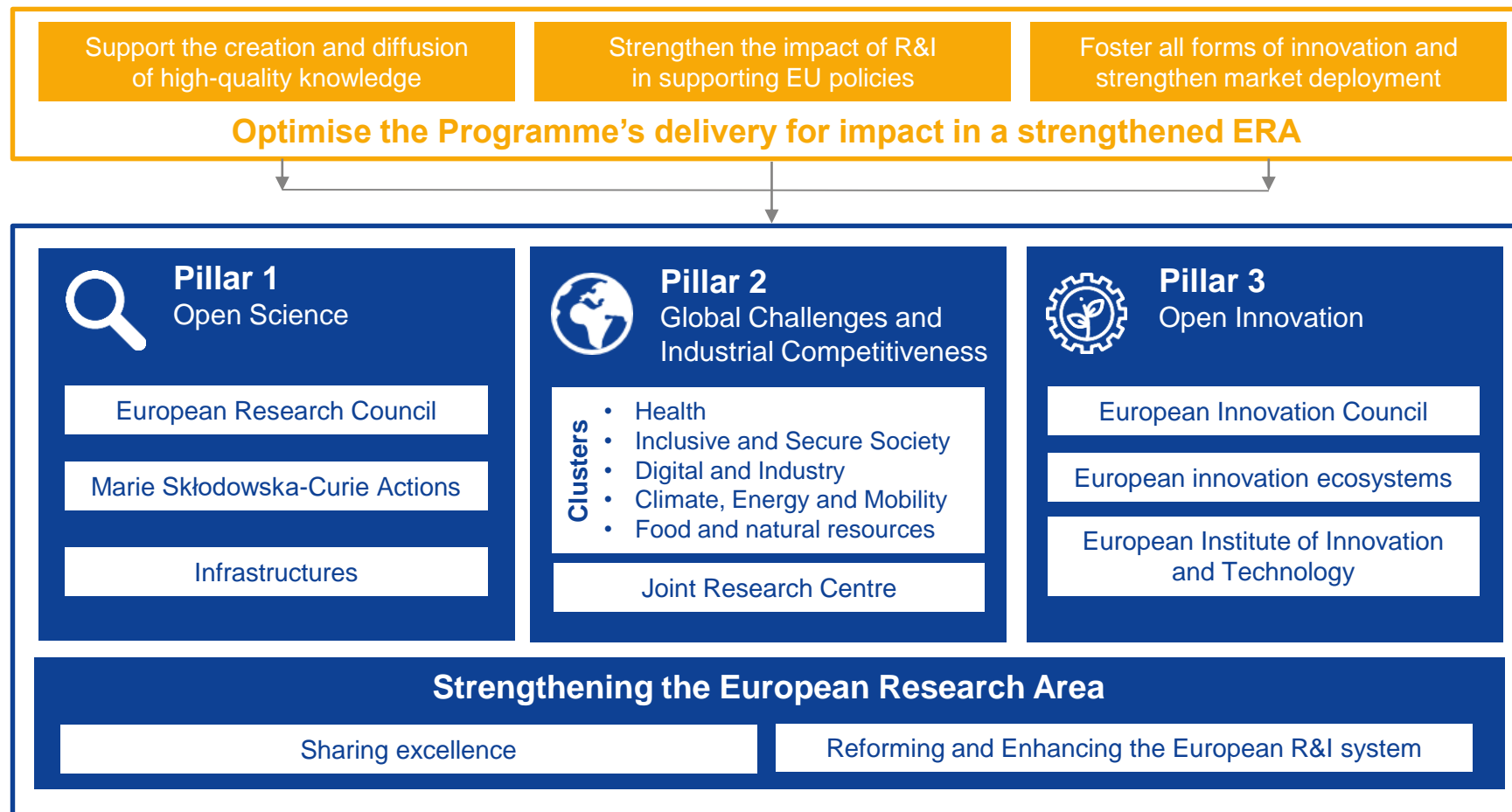


# Horizon Europe – What?

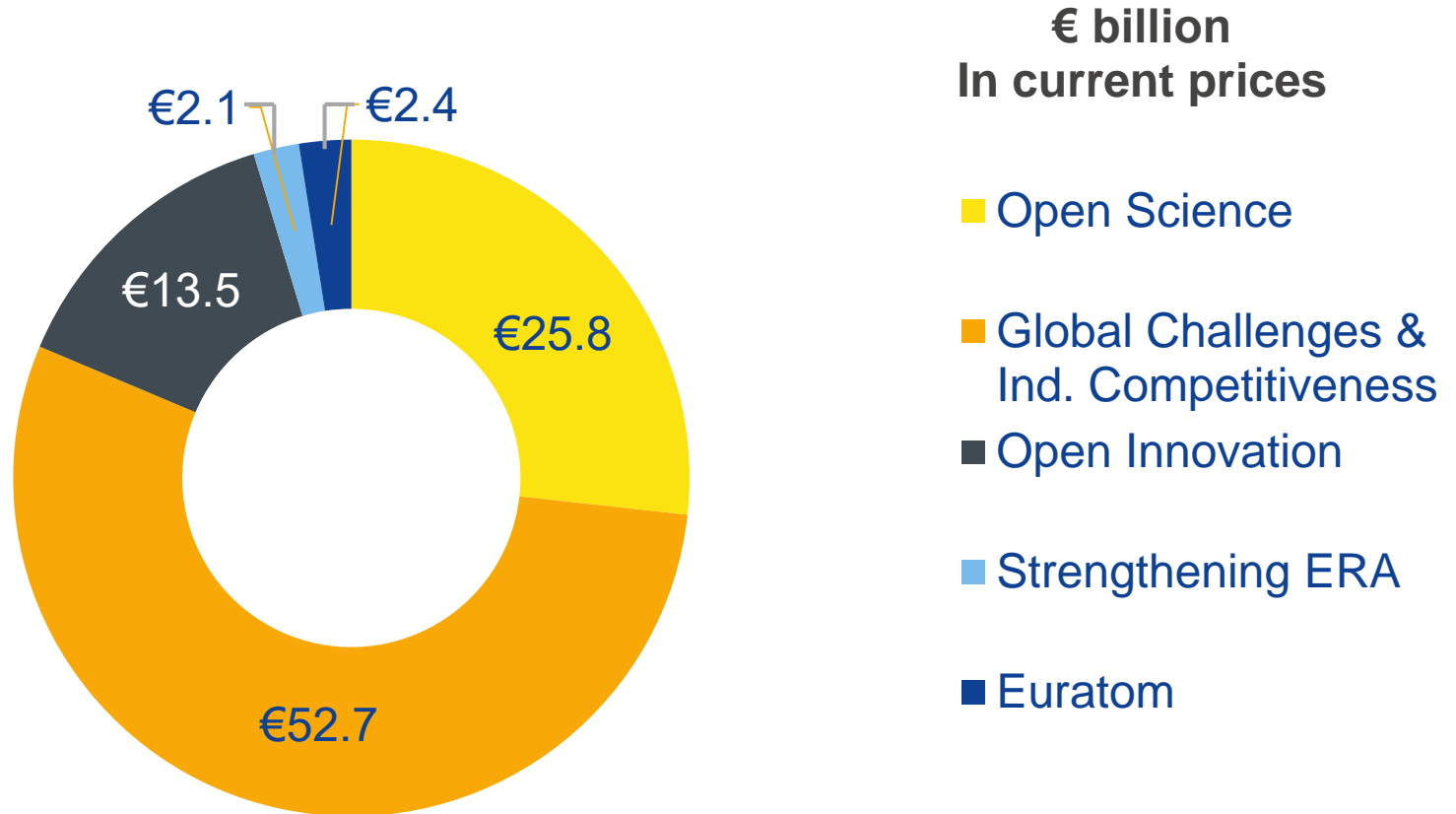


# Horizon Europe: evolution not revolution

## Specific objectives of the Programme



# Budget: €100 billion\*



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

# PILLAR 2 - GLOBAL CHALLENGES & INDUSTRIAL COMPETITIVENESS:

## BOOSTING KEY TECHNOLOGIES AND SOLUTIONS UNDERPINNING EU POLICIES & SUSTAINABLE DEVELOPMENT GOALS

<b>Clusters</b> implemented through usual calls, <b>missions &amp; partnerships</b>	Budget (€ billion)
Health	€ 7.7
Inclusive and Secure Societies	€ 2.8
<b>Digital and Industry</b>	<b>€ 15</b>
Climate, Energy and Mobility	€ 15
Food and Natural Resources	€ 10
<b>Joint Research Centre</b>	€ 2.2

# Clusters in 'Global Challenges and Industrial Competitiveness'

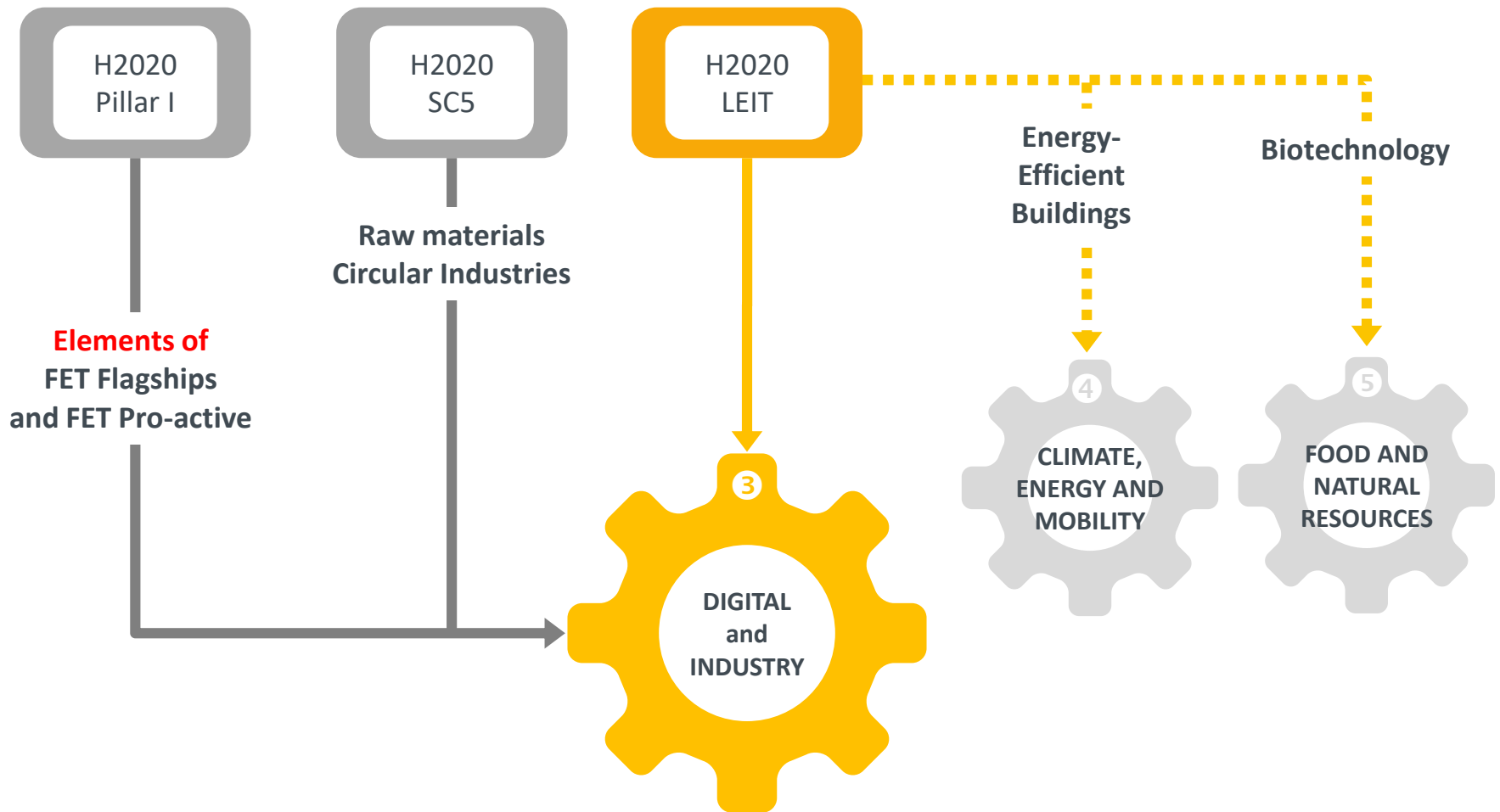
Clusters	Areas of intervention	
<b>Health</b>	<ul style="list-style-type: none"> <li>* Health throughout the life course</li> <li>* Non-communicable and rare diseases</li> <li>* Tools, technologies and digital solutions for health and care</li> </ul>	<ul style="list-style-type: none"> <li>* Environmental and social health determinants</li> <li>* Infectious diseases</li> <li>* Health care systems</li> </ul>
<b>Inclusive and Secure Societies</b>	<ul style="list-style-type: none"> <li>* Democracy</li> <li>* Social and economic transformations</li> <li>* Protection and Security</li> </ul>	<ul style="list-style-type: none"> <li>* Cultural heritage</li> <li>* Disaster-resilient societies</li> <li>* Cybersecurity</li> </ul>
<b>Digital and Industry</b>	<ul style="list-style-type: none"> <li>* Manufacturing technologies</li> <li>* Advanced materials</li> <li>* Next generation internet</li> <li>* Circular industries</li> <li>* Space</li> </ul>	<ul style="list-style-type: none"> <li>* Key digital technologies</li> <li>* Artificial intelligence and robotics</li> <li>* Advanced computing and Big Data</li> <li>* Low carbon and clean industry</li> </ul>
<b>Climate, Energy and Mobility</b>	<ul style="list-style-type: none"> <li>* Climate science and solutions</li> <li>* Energy systems and grids</li> <li>* Communities and cities</li> <li>* Industrial competitiveness in transport</li> <li>* Smart mobility</li> </ul>	<ul style="list-style-type: none"> <li>* Energy supply</li> <li>* Buildings and industrial facilities in energy transition</li> <li>* Clean transport and mobility</li> <li>* Energy storage</li> </ul>
<b>Food and Natural Resources</b>	<ul style="list-style-type: none"> <li>* Environmental observation</li> <li>* Agriculture, forestry and rural areas</li> <li>* Food systems</li> <li>* Circular systems</li> </ul>	<ul style="list-style-type: none"> <li>* Biodiversity and natural capital</li> <li>* Sea and oceans</li> <li>* Bio-based innovation systems</li> </ul>



# CLUSTER 3 Digital and Industry: why combined in a cluster?

- These are the sciences and technologies that **enable** other clusters: underpinning, all-pervasive
- **Digitisation, Key Enabling Technologies** and **Space** are major drivers and enablers
- This cluster will develop **technological and industrial capacities** for industrial competitiveness and the capacity to address the global challenges
- It will support the **digitised, circular, low-carbon** and **low-emission economy**
- **Universities and research institutes** remain of the essence (in these parts in H2020, they get 50% of the budget)

# CLUSTER 3 – What moves in / out



# CLUSTER 3 Digital and Industry: what's new?

- This cluster brings together the technologies that enable other clusters to tackle global challenges.
- Attention for European social and ethical values, e.g. a human-centric internet, AI and citizens, protecting privacy, the skills needed, the human element in manufacturing
- New attention for raw materials: after creating a research community in H2020, more emphasis on piloting, large scale demonstrators and finding alternatives for critical raw materials
- Space: R&I actions will be streamlined to support the proposed single Space Programme in the MMF, which gathers under one umbrella earth observation, geolocalisation, space surveillance and tracking and secure governmental communication

# CLUSTER 3 Digital and Industry: how will it link to other EU programmes?

- The **Digital Europe Programme** (DEP) will reinforce the EU's digital capacities (notably in computing, data, cybersecurity, AI,..) and ensure their widest possible roll out. Novel digital technologies developed by Horizon Europe will for example progressively be taken up and deployed by DEP
- The European **Space** programme will feed R&I priorities into this cluster, will pick up results for applications in e.g. agriculture, climate monitoring
- The **InvestEU** Fund can finance innovators and innovations coming from this cluster, to enable their roll-out and scale-up
- The **European Regional Development Fund** (ERDF) may support the take-up of results emerging from this cluster
- The **Connecting Europe Facility** (CEF) supports the large-scale roll-out and deployment of innovative new technologies and solutions in transport, energy and digital-physical infrastructures
- The **Single Market Programme** will support the competitiveness of SMEs and entrepreneurship (e.g. Enterprise Europe Network)



# CLUSTER 3 Digital and Industry

Cluster 3 contributes to many Sustainable Development Goals



# CLUSTER 3 Digital and Industry: how will it be implemented?

**Collaborative projects** remain the default:

- Consortiums of **at least three independent legal entities** and with at least one of them established in a Member State (art. 18.2 FP/RfP)
- Competitive and Open calls for proposals, as **regular calls**, calls for **missions** and **partnerships**

The **Work Programme**, endorsed by the **Programme Committee** for this cluster, will identify **topics** for each call.

# Horizon Europe – What's new?

# 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





# 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)



# 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 by partners; commitment of partners for financial and in-kind contributions & financial contribution by Horizon Europe

### 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



European  
Commission

# Horizon Europe – How?

# Simple and fit for purpose rules

- Further alignment to the Financial Regulation
- Increased use of **simplified forms of grants** where appropriate (building on the H2020 lump sum pilot experience)
- Broader acceptance of **usual cost accounting practices**
- Enhanced **cross-reliance on audits** benefiting beneficiaries taking part in several Union programmes

**while ensuring continuity and consistency for beneficiaries by maintaining**

- Attractive H2020 funding model, including up to 100% funding rate
- Single set of rules principle



# **Strategic planning** to define multiannual work programmes and calls for proposals

- Transparency and stakeholder involvement
- Prioritisation and flexibility to align to political priorities
- Internal programme coherence & synergies with other programmes

## **Multiannual Strategic R&I Plan**

**\* Multiannual orientations and priorities in one document**

**\* Areas for partnerships and missions**

Strategic discussions with Member States and European Parliament

Consultation with stakeholders

**Work Programmes**

# Next steps



# Further information

**Horizon Europe:** [https://ec.europa.eu/commission/publications/research-and-innovation-including-horizon-europe-iter-and-euratom-legal-texts-and-factsheets\\_en](https://ec.europa.eu/commission/publications/research-and-innovation-including-horizon-europe-iter-and-euratom-legal-texts-and-factsheets_en)

**Key Enabling Technologies, R&I website:**

[http://ec.europa.eu/research/industrial\\_technologies/index\\_en.cfm](http://ec.europa.eu/research/industrial_technologies/index_en.cfm)

**EU Mapping of KETs centres:**[GROW-KETS-TECHNO-CENTRES@ec.europa.eu](mailto:GROW-KETS-TECHNO-CENTRES@ec.europa.eu)

**Participant Portal - Funding Opportunities and support services:**

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

**CORDIS database with EU funded research projects:**

[http://cordis.europa.eu/projects/home\\_en.html](http://cordis.europa.eu/projects/home_en.html)

**Horizon 2020:** <http://ec.europa.eu/programmes/horizon2020/en/>

**Re-finding Industry - Defining innovation:**

<https://publications.europa.eu/en/publication-detail/-/publication/28e1c485-476a-11e8-be1d-01aa75ed71a1/language-en>

**Single Market Programme:**

[https://ec.europa.eu/commission/publications/single-market-programme-legal-texts-and-factsheets\\_en](https://ec.europa.eu/commission/publications/single-market-programme-legal-texts-and-factsheets_en)

**COSME:** [https://ec.europa.eu/growth/smes/cosme\\_en](https://ec.europa.eu/growth/smes/cosme_en)



# Thank you!

#HorizonEU

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

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**Directorate for Industrial Transformation**  
**and Advanced Value Chains**