



# EU STI policy making and the European Commission's proposal for Horizon Europe



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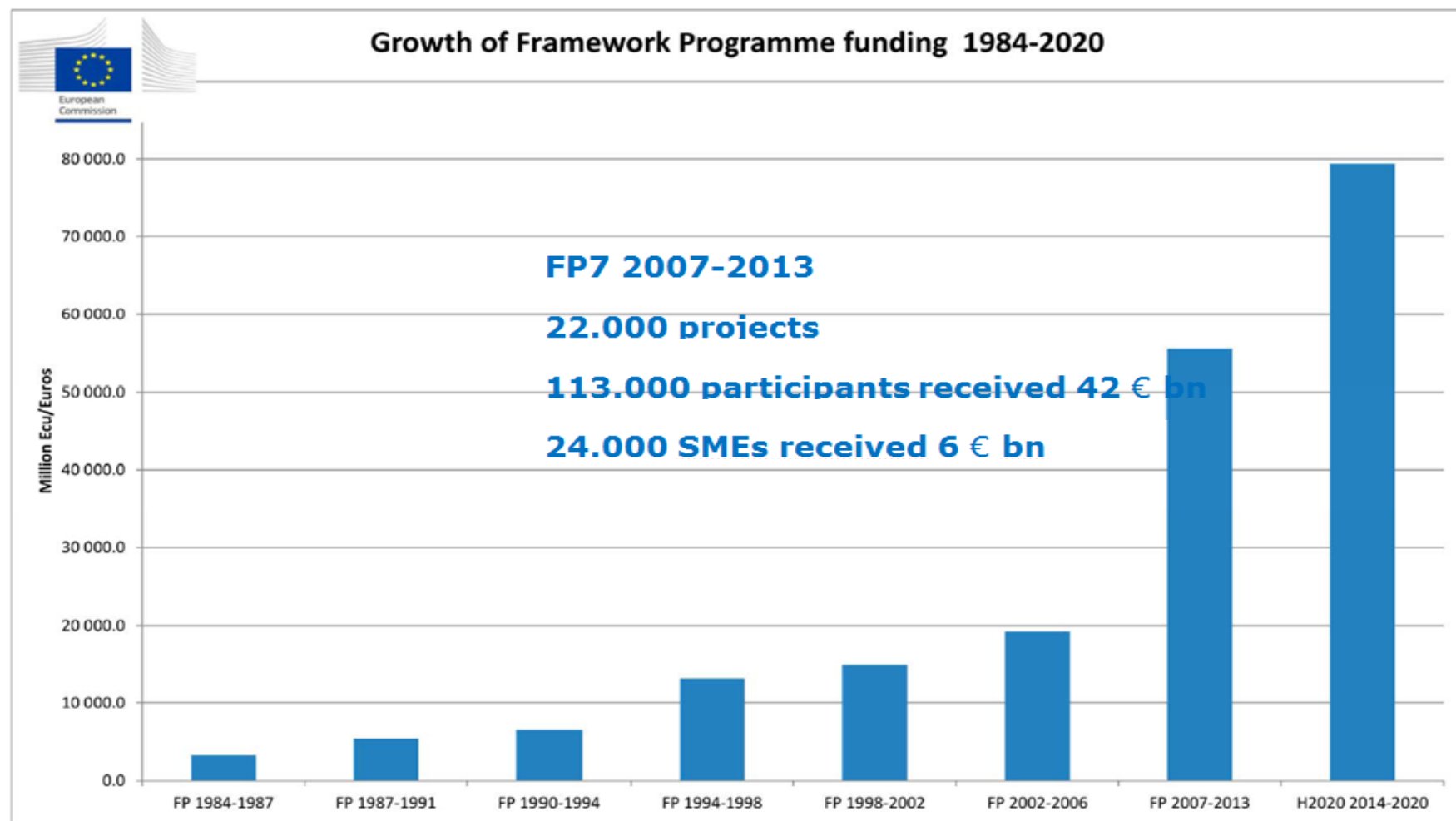
**GIST Seminar, GRIPS**  
**19 July 2018**



# Delegation of the European Union

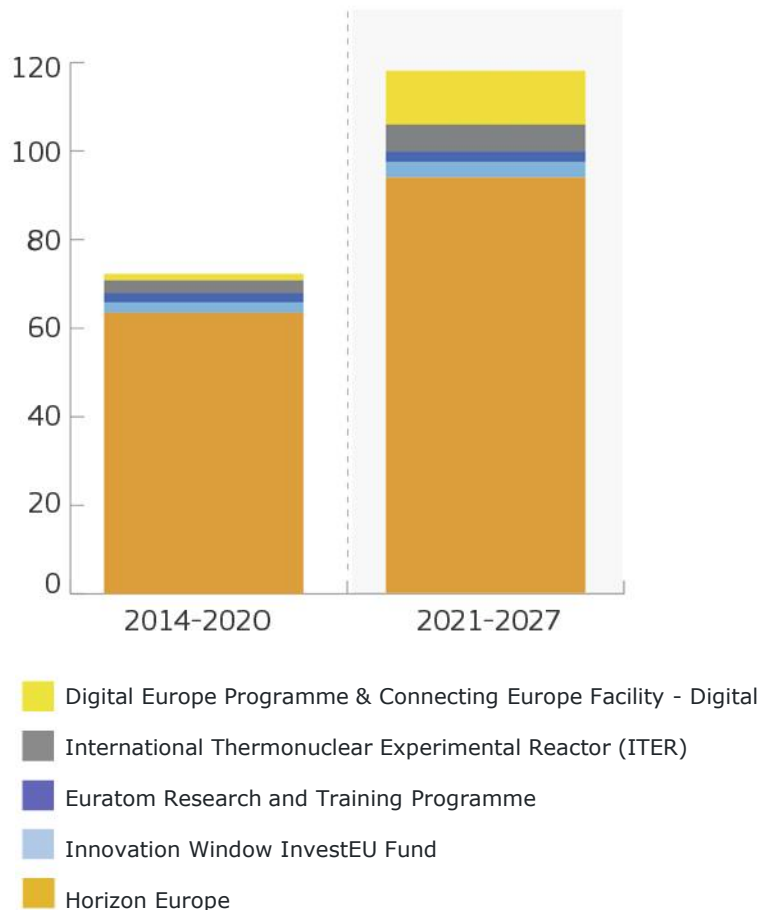
## 駐日欧州連合代表部

How has EU Research and Innovation funding evolved over recent years?



# The next long-term EU budget:

## Investing in the future



Building on the success of the EU's past flagship research and innovation programmes, the Commission proposes to **increase investment in research-innovation and digital** by allocating **€ 114.2 billion** for the future Multiannual Financial Framework.

Source: European Commission

Note: Compared to the Multiannual Financial Framework 2014-2020 at EU-27 (estimate)

# THE NEW MULTIANNUAL FINANCIAL FRAMEWORK 2021 - 2027

## A BUDGET FOR A UNION THAT PROTECTS, EMPOWERS AND DEFENDS

In billion euro, current prices



### I. SINGLE MARKET, INNOVATION AND DIGITAL

€187.4

- 1 Research and Innovation
- 2 European Strategic Investments
- 3 Single Market
- 4 Space



### II. COHESION AND VALUES

€442.4

- 5 Regional Development and Cohesion
- 6 Economic and Monetary Union
- 7 Investing in People, Social Cohesion and Values



### III. NATURAL RESOURCES AND ENVIRONMENT

€378.9

- 8 Agriculture and Maritime Policy
- 9 Environment and Climate Action



### IV. MIGRATION AND BORDER MANAGEMENT

€34.9

- 10 Migration
- 11 Border Management



### V. SECURITY AND DEFENCE

€27.5

- 12 Security
- 13 Defence
- 14 Crisis Response



### VI. NEIGHBOURHOOD AND THE WORLD

€123

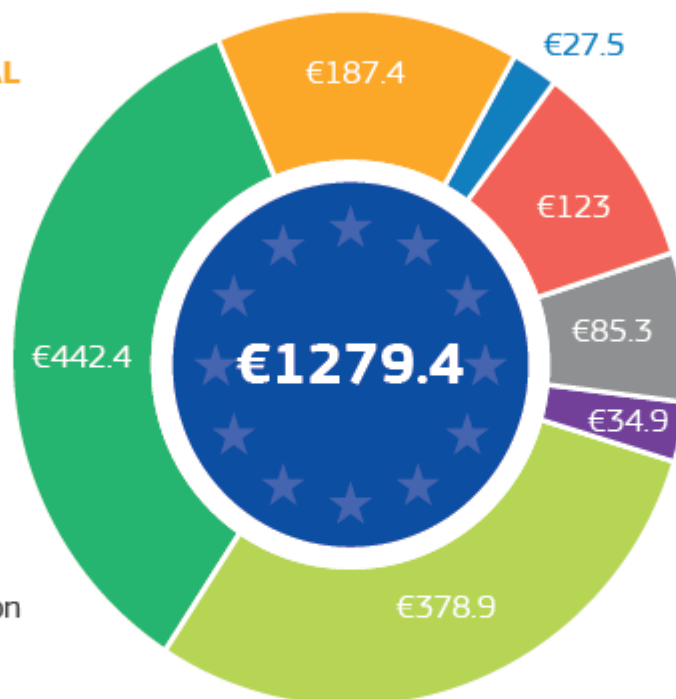
- 15 External Action
- 16 Pre-Accession Assistance



### VII. EUROPEAN PUBLIC ADMINISTRATION

€85.3

- 17 European Public Administration





# The legal status of Horizon 2020

L 347/104

EN

Official Journal of the European Union

20.12.2013

REGULATION (EU) No 1291/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 11 December 2013  
establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020)  
and repealing Decision No 1982/2006/EC

(Text with EEA relevance)

**A full-fledged legal instrument ("Regulation"),  
which has:**

- **Direct applicability in the whole EU**



# The Legal basis of Horizon Europe

- ‘Horizon Europe’ is based on the TFEU Titles ‘Industry’ and ‘Research and technological development and space’ (Articles 173, 182, 183 and 188).
- Due to its strong support to innovation, the Specific Programme implementing Horizon Europe is now based on the TFEU Titles ‘Industry’ and ‘Research and technological development and space’ (Articles 173 and 182), as is the specific programme on defence research (*ibid*).
- The European Institute for Innovation and Technology (EIT) derives from the ‘Industry’ title and will continue to be funded by a financial contribution from Horizon Europe.
- The proposal for the Euratom research and training programme is based on Article 7 of the Euratom Treaty.





# The Horizon Europe package

The Horizon Europe package consists of proposals for:

1. a Framework Programme for Research and Innovation entitled ‘Horizon Europe’, including laying down its rules for participation and dissemination (as per Treaty on the Functioning of the European Union – ‘TFEU’),
2. a specific programme to implement ‘Horizon Europe’ (‘TFEU’),
3. a Research and Training Programme under the Euratom Treaty complementing Horizon Europe, along with the
4. associated impact assessment and legal financial statements.



EUROPEAN  
COMMISSION

Brussels, 7.6.2018  
COM(2018) 435 final

2018/0224 (COD)

Proposal for a

**REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**establishing Horizon Europe – the Framework Programme for Research and  
Innovation, laying down its rules for participation and dissemination**

(Text with EEA relevance)

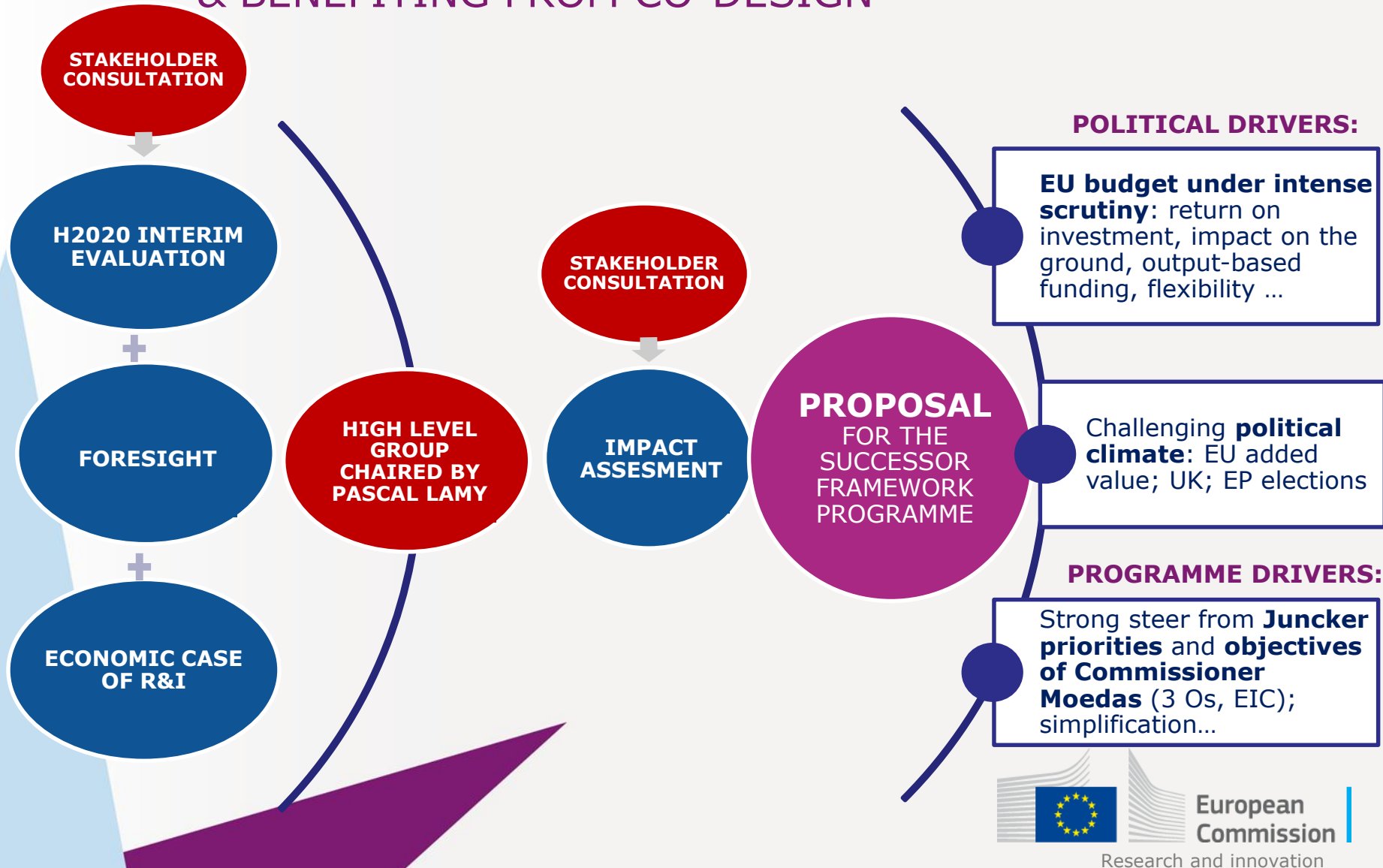
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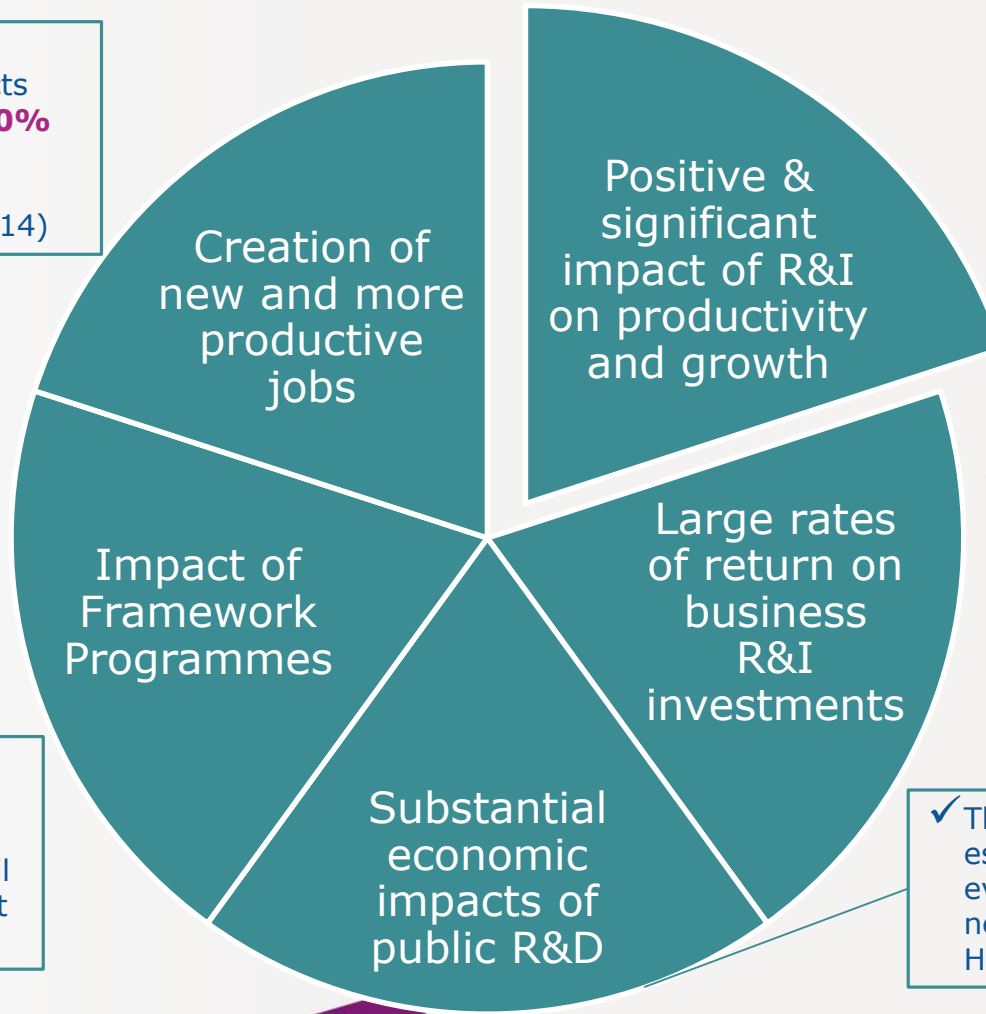
# TOWARDS HORIZON EUROPE: LEARNING FROM THE PAST, CONSIDERING THE FUTURE & BENEFITING FROM CO-DESIGN





# TOWARDS HORIZON EUROPE: THE ECONOMIC CASE OF R&I

- ✓ Companies with innovative products generate **30%-40% of new jobs in manufacturing** (Harrison et al 2014)



- ✓ **62% of growth in Europe** from 1995 to 2007 derives from R&I (NESTA, 2013)
- ✓ An **increase in R&D investment of 0.2% of GDP** can lead to an **increase of 1.1% of GDP**, i.e. five-fold in absolute terms (Donselaar and Koopmans, 2016)

- ✓ On average, the net **benefits** for a company that **invests 100 € in R&D** are **20 €**, and **up to 54 €** for R&D intensive companies (Hall et al, 2010)

- ✓ Economic growth: contribution of a **0.15% annual GDP growth** until 2030 (FP7 ex post evaluation, 2016)

- ✓ The **rate of return to public R&D** is estimated to be **around 20%**, i.e. for every 100 € of public R&D funding, the net benefit is of 20 € (Sveikaucas 2012, Haskel et al. 2014, Georgiou 2015)

Commission proposal for  
**Horizon Europe**

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

#HorizonEU



# 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**



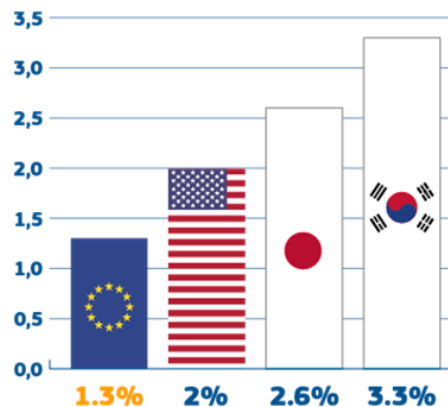
Credits: <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>



# 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

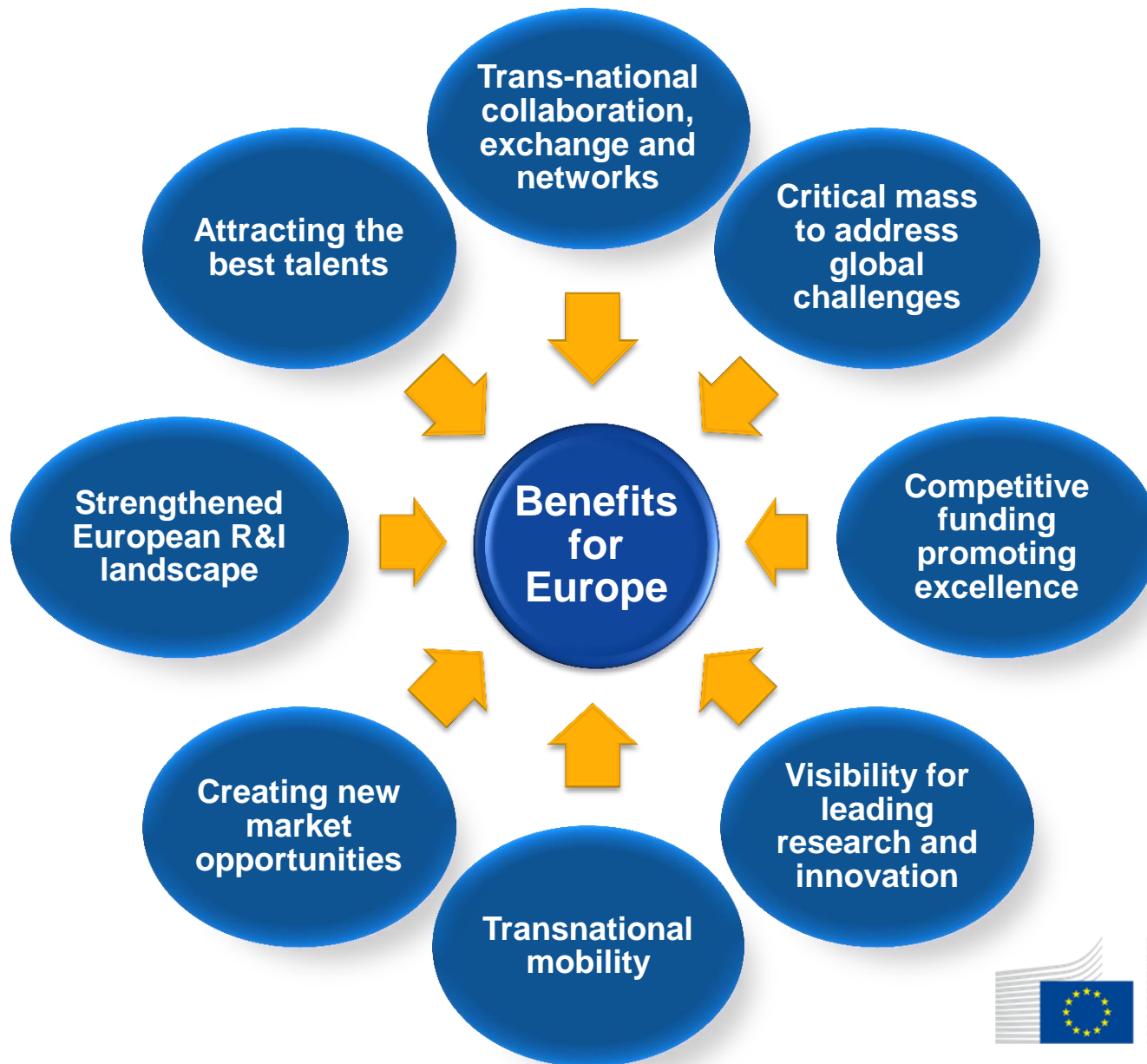
**...Europe fails to transform leadership in science into leadership in innovation and entrepreneurship**

# 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



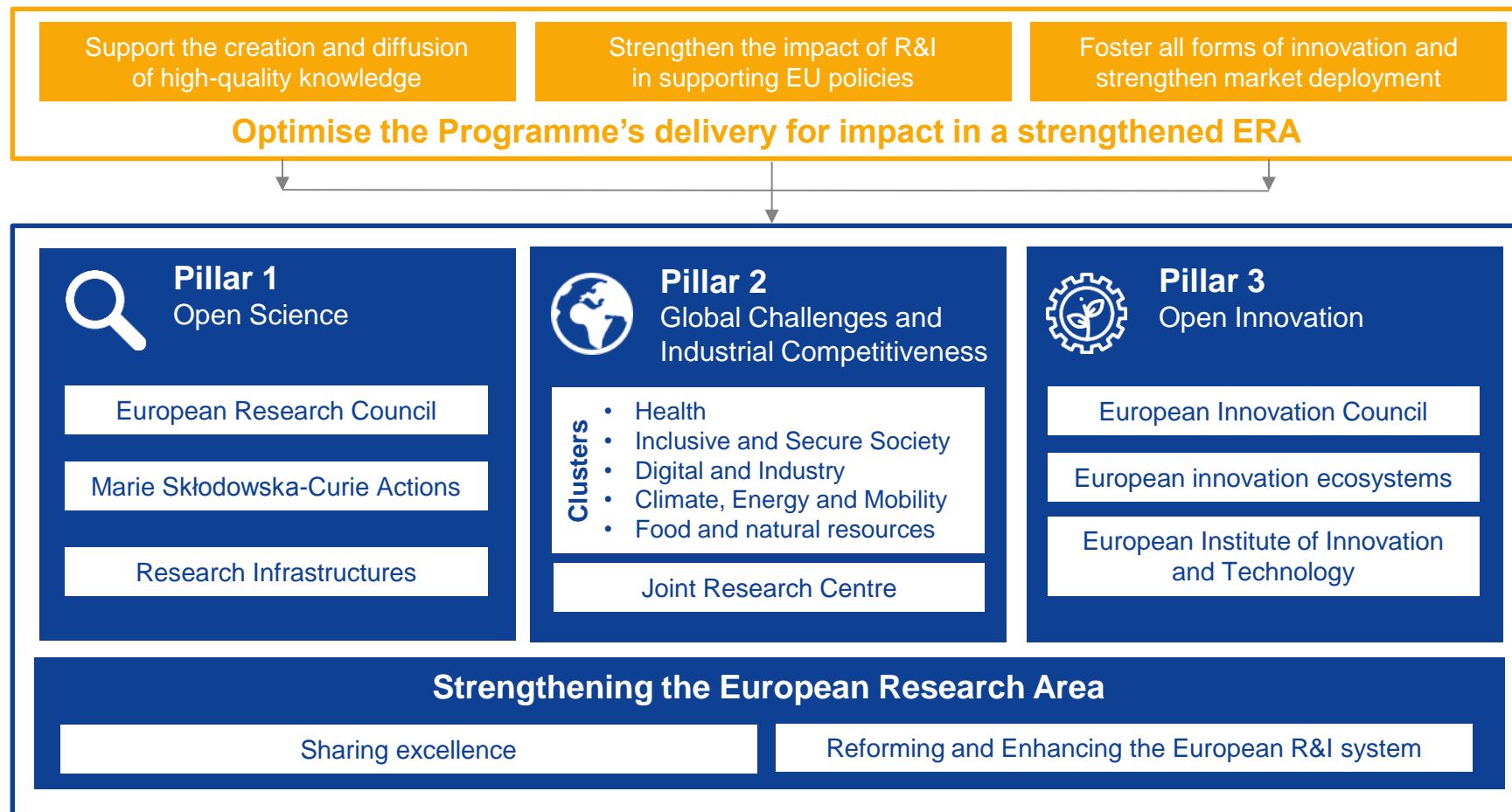
# Added value through Horizon Europe:



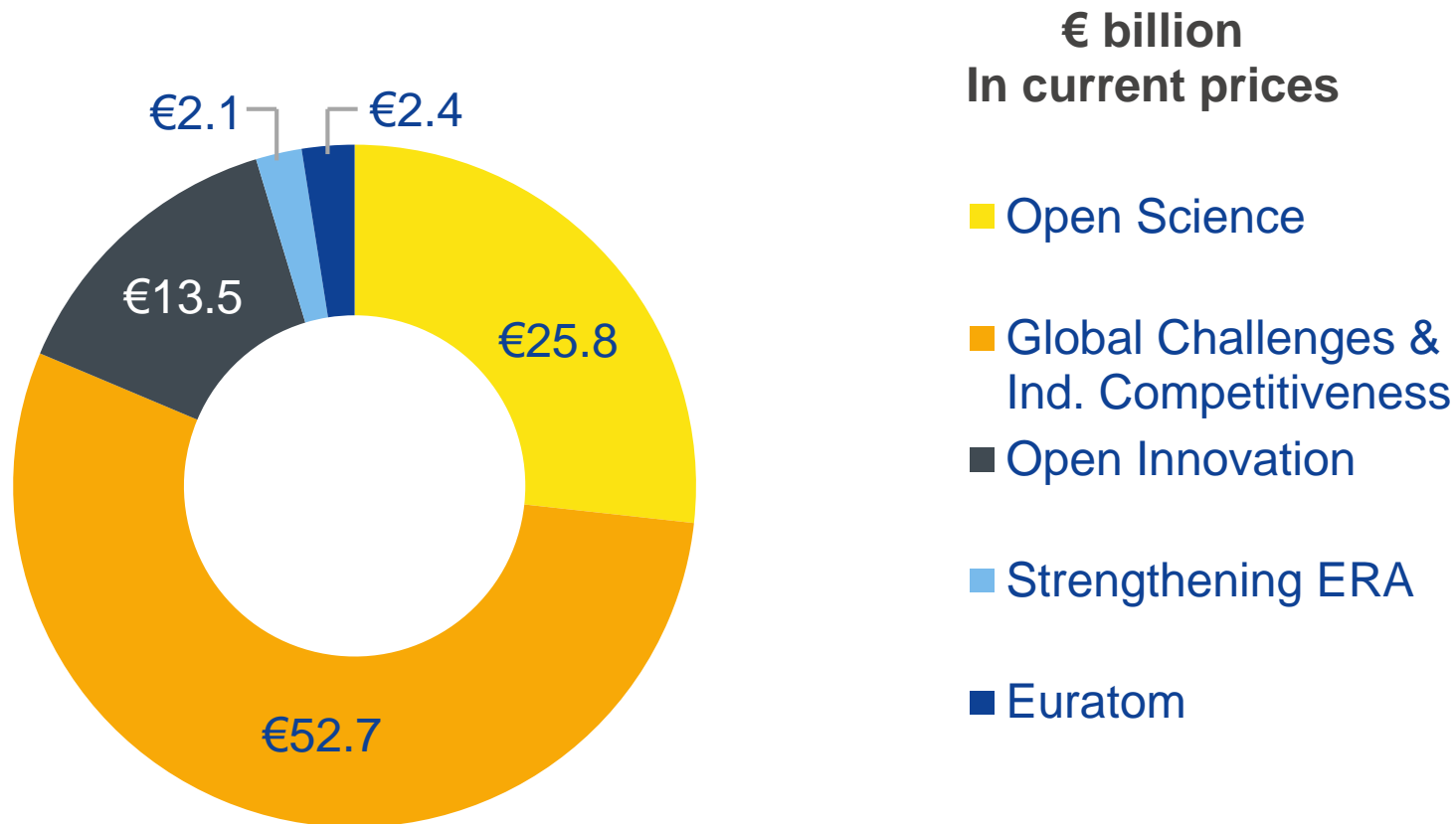
# Horizon Europe – What?

# Horizon Europe: evolution not revolution

## Specific objectives of the Programme



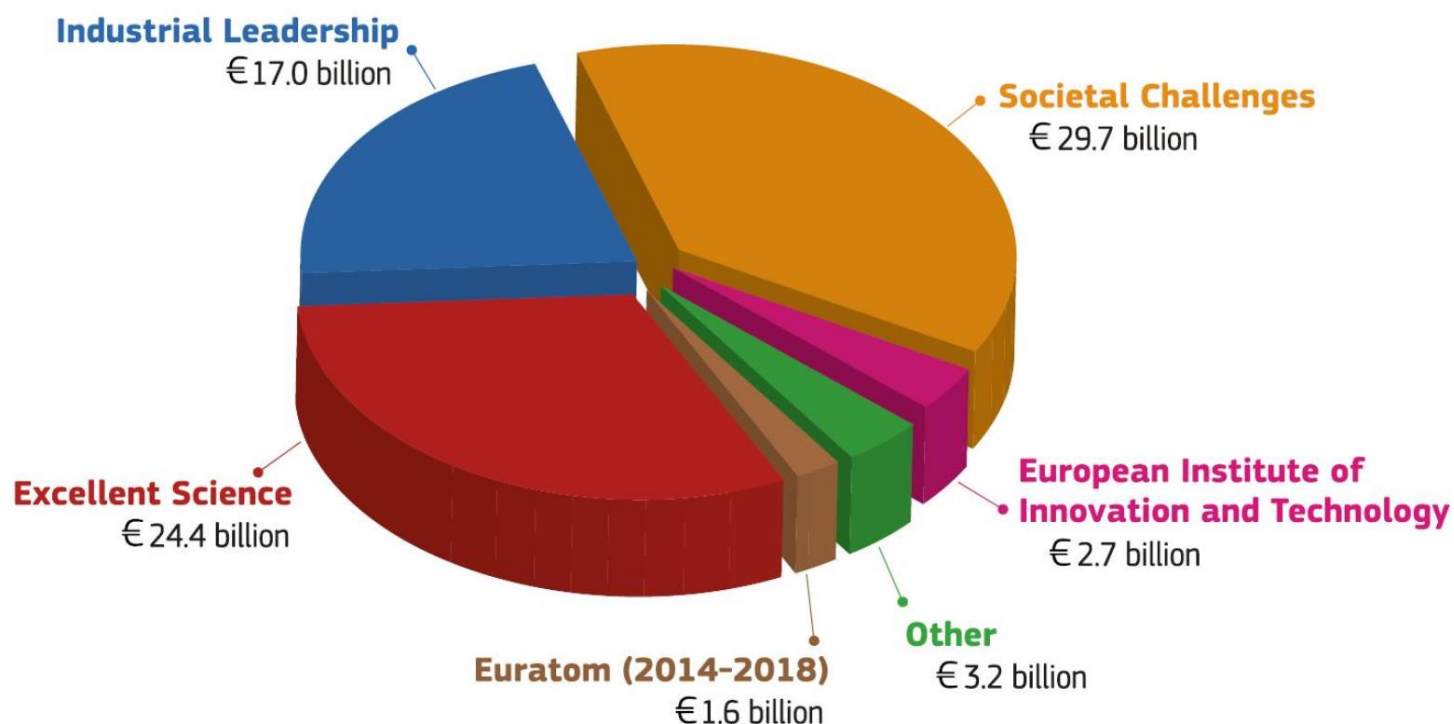
# Budget: €100 billion\*



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



# Horizon 2020 budget (2014-2020)



# 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



# European Innovation Council

The EIC will support innovations with breakthrough and disruptive nature and scale up potential that are too risky for private investors.

**European  
Innovation  
Council**

**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**

Two complementary instruments bridging the gap from idea to investable project

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

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



# R&I Missions

## R&I Missions

**Connecting to citizens:** Missions will relate EU's research and innovation to society and citizens' needs, with strong visibility and impact

A mission will consist of 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 criteria

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)



# International Cooperation

## International Cooperation

Will ensure effective tackling of global societal challenges; access to the world's best talents, expertise and resources; enhanced supply and demand of innovative solutions

### Extended openness to association

- Third countries with good capacity in science, technology and innovation
- Taking into account objective of driving economic growth in Europe through innovation
- General opening for international participation
- Intensified targeted actions (flagship initiatives, joint calls, etc.)





# Open Science across the programme

- Encouraging uptake of **Open Science practices** through earmarked funding, including to enhance **researcher skills** in Open Science and support **reward systems** that promote it
- **FAIR (findable, accessible, interoperable, re-usable) and Open Data:** research data is open by default (with opt-out possibilities) and a data management plan is obligatory
- **Open Access** to publications: no reimbursement of article processing charge (APC) for publications in hybrid journals
- **Monitoring system** to ensure compliance with Horizon Europe provisions



# 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 – In detail

## Pillar 1

# OPEN 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 billion

### Marie Skłodowska-Curie Actions

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

€ 6.8 billion

### Research Infrastructures

- Integrated and inter-connected world-class research infrastructures

€ 2.4 billion

## 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
Digital and Industry	€ 15
Climate, Energy and Mobility	€ 15
Food and Natural Resources	€ 10
<b>Joint Research Centre</b> supports European policies with independent scientific evidence & technical support throughout the policy cycle	€ 2.2

# Clusters in 'Global Challenges and Industrial Competitiveness'

Clusters	Areas of intervention	
Health	<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>
Inclusive and Secure Societies	<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>
Digital and Industry	<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>
Climate, Energy and Mobility	<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>
Food and Natural Resources	<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>



## Pillar 3

# OPEN INNOVATION:

stimulating market-creating breakthroughs and ecosystems conducive to innovation

### European Innovation Council

- Support to innovations with breakthrough and market creating potential

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

### 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

**€ 3 billion**

# Strengthening the European Research Area:

optimising strengths & potential for a more innovative Europe

## Sharing Excellence

- Teaming  
(institution building)
- Twinning  
(institutional networking)
- ERA Chairs bringing  
excellence to institutions
- COST

€ 1.7 billion



## 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

€ 0.4 billion

# Euratom research and training programme (2021-2025)

- **Objective**

Research and training activities to reduce nuclear safety and security risks, 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 programme
- Simplification: Specific objectives from currently 14 to 4, covering both direct actions (implemented by JRC) and indirect actions

- **Budget:** € 2.4 billion (2021-2027)

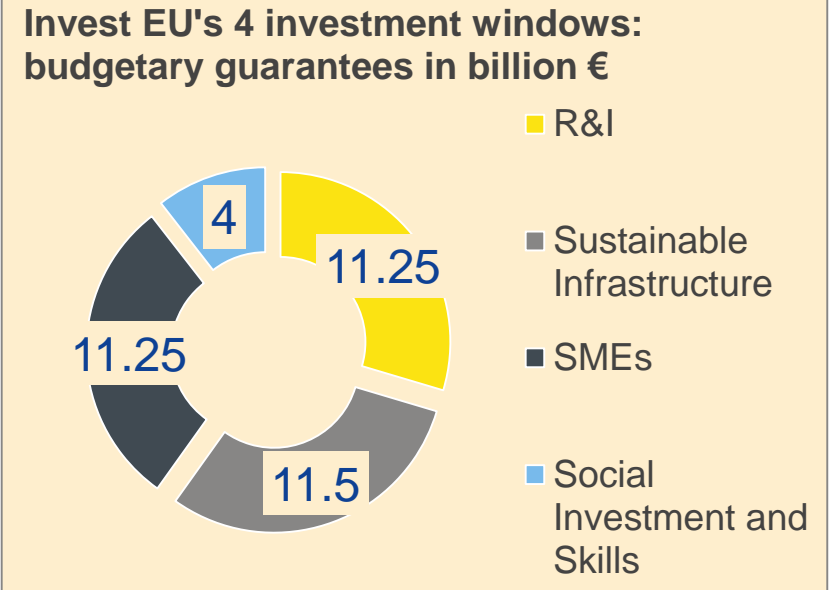
# InvestEU for Research and Innovation (R&I)

**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

# 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



# Synergies with other Union programmes

## Horizon Europe



### Other Union Programmes, including

Common Agricultural Policy  
ERDF  
External Instrument  
Maritime & Fisheries Fund  
InvestEU  
LIFE  
Connecting Europe Facility  
ESF+  
Digital Europe  
Space Programme  
Erasmus  
Innovation Fund  
Internal Security Fund  
Single Market Programme

## Enhanced synergies

### Compatibility

Harmonisation of funding rules;  
flexible co-funding schemes;  
pooling resources at EU level

### Coherence and complementarity

Alignment of strategic priorities in  
support of a common vision



European  
Commission

# **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**

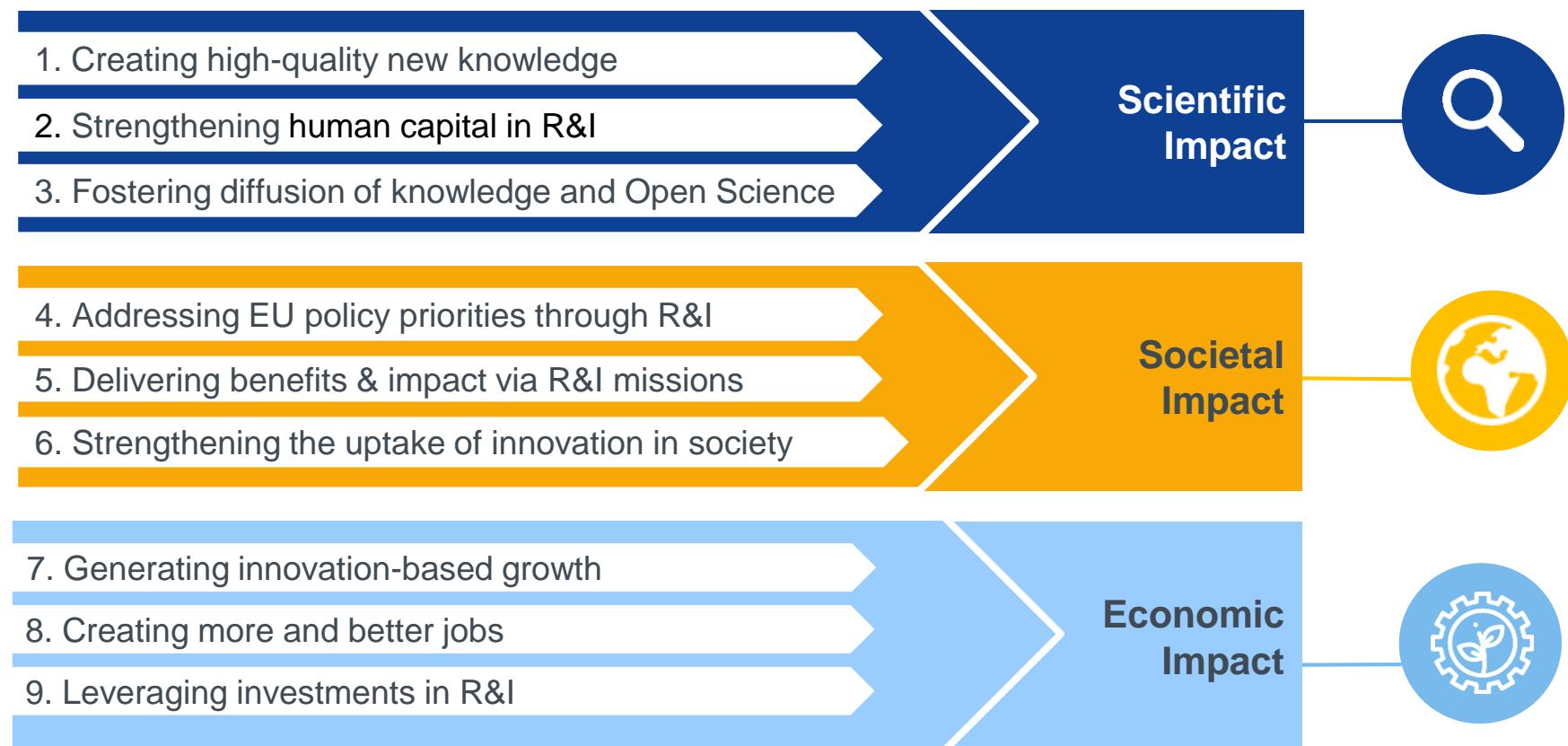
**\* Areas for partnerships and missions**

Strategic discussions with Member States and European Parliament

Consultation with stakeholders

**Work Programmes**

# Key impact pathways to track progress



# Next steps





”

**'With growing international competition, Europe needs to act urgently on research and innovation.**

**The proposed € 100 billion for the next EU research and innovation programme would be a huge boost.'**

**Carlos Moedas, Commissioner, 15/05/2018**

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**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](http://ec.europa.eu/budget/mff/index_en.cfm)







# Thank you!

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