

A complex, three-dimensional molecular structure composed of numerous spheres (atoms) connected by rods (bonds). The structure is rendered in a light blue, semi-transparent style, giving it a futuristic and scientific appearance. It is positioned in the upper half of the image, partially overlapping the background and the main title.

# EXPERT SESSION

HORIZON EUROPE: HOW TO PREPARE AND LESSONS  
LEARNED FROM H2020

29 NOVEMBER 2019 11'00 (CET)

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# Horizon Europe

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

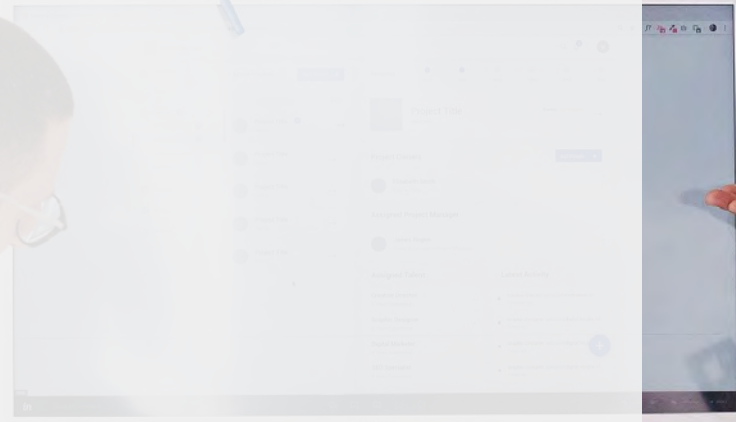




# Welcome!

Liliya will introduce the next R&I framework programme:

- ✓ Structure
- ✓ Novelties
- ✓ Financial changes
- ✓ How to prepare



# Horizon Europe: Introduction



## Quick facts



# Horizon Europe

The EU's next research and  
innovation programme  
(2021 – 2027)

- 3 pillars + EU-wide R&I Missions + Partnerships + Collaboration with other programmes
- €100 billion budget planned
- To be launched on 1 January 2021

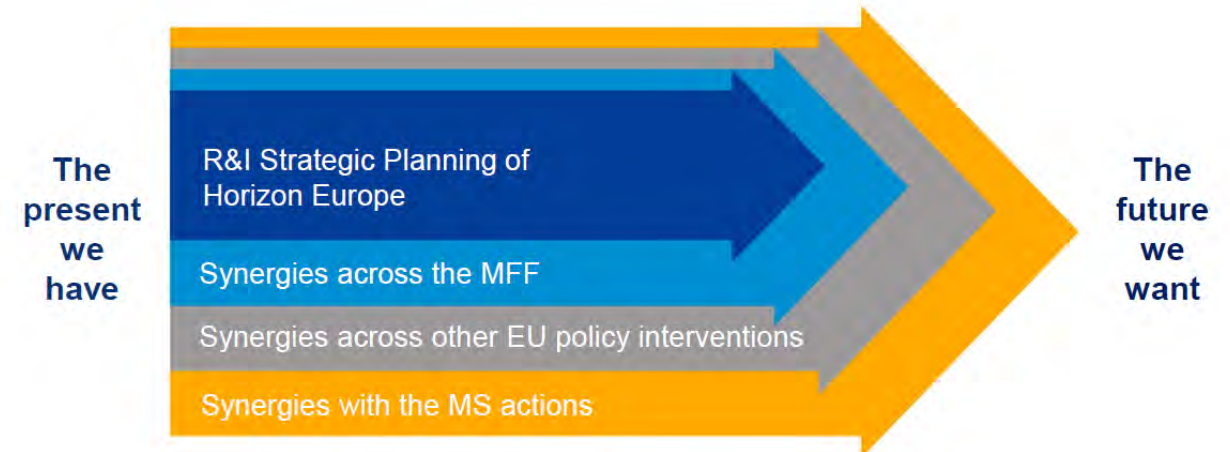


# Multiannual Strategic Plan

Point of reference for R&I in all related programmes across the EU budget and non-funding instruments

- **Consistency** and synergy between work programmes, EU and national priorities; other programmes, policies
- HE objectives, **focus on impact**, coherence of 3 pillars
- **Less fragmentation** of efforts, duplication and funding overlaps
- **Link research** and other actions for further policy support
- **Balanced**, broad, systemic, cross-disciplinary, cross-sectoral and cross-policy **approach to R&I**
- **Early involvement and consultations with** various stakeholders
- From Plan for 2021-2024 to Work Programme 2021-2022 → calls

## The Strategic Planning Process:



... and our strategic plan will attract attention and cooperation at international/global level

# Horizon Europe priorities (background studies)

- Failing to transform science into innovation and entrepreneurship
- Foresight and preparedness
- BOHEMIA study (information base for Horizon Europe) - scenarios and recommendations for strategic intelligence reflections on new important emerging areas, risks and opportunities, and on new ways to stimulate important transitions.
- Focusing R&I on the ecological, social and economic transitions and related societal challenges
- Focusing on cutting-edge research and innovation projects spanning from R&I to deployment

## 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

v. 25 June 2018



Strengthen EU science and technology thanks to increased investment in highly skilled people and cutting-edge research;



Foster the EU's industrial competitiveness and its innovation performance, notably supporting market-creating innovation via the European Innovation Council and the European Institute of Innovation and Technology;



Deliver on the EU's strategic priorities, such as the Paris Agreement on climate change, and tackle global challenges that affect the quality of our daily lives.

# Horizon Europe: Focus and Novelties



# Key Novelties

- Open – Open – Open! European Open Science Cloud
- Joint international actions – targeted flagships, joint calls
- Mission-oriented R&I
- Innovation centric, risk taking and agile (grants + accelerators)
- Set up of the European Innovation Council
- New generation of partnerships (Co-programmed; Co-funded; Institutionalised)
- Citizen Science

## 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 →
-  Encourage participation →

## Key Novelties in Horizon Europe

European Innovation Council

R&I Missions

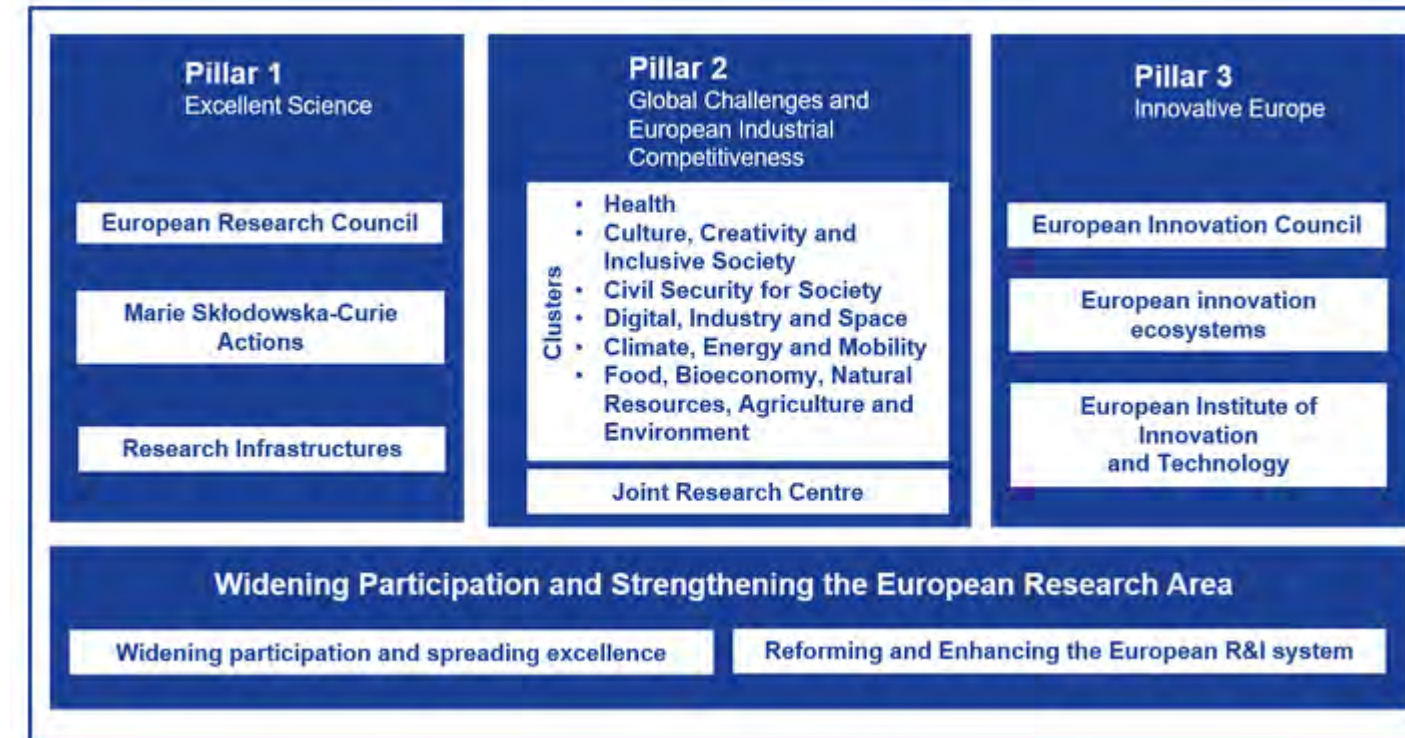
Extended association possibilities

Open science policy

New approach to Partnerships

Spreading Excellence

# Horizon Europe Pillars



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

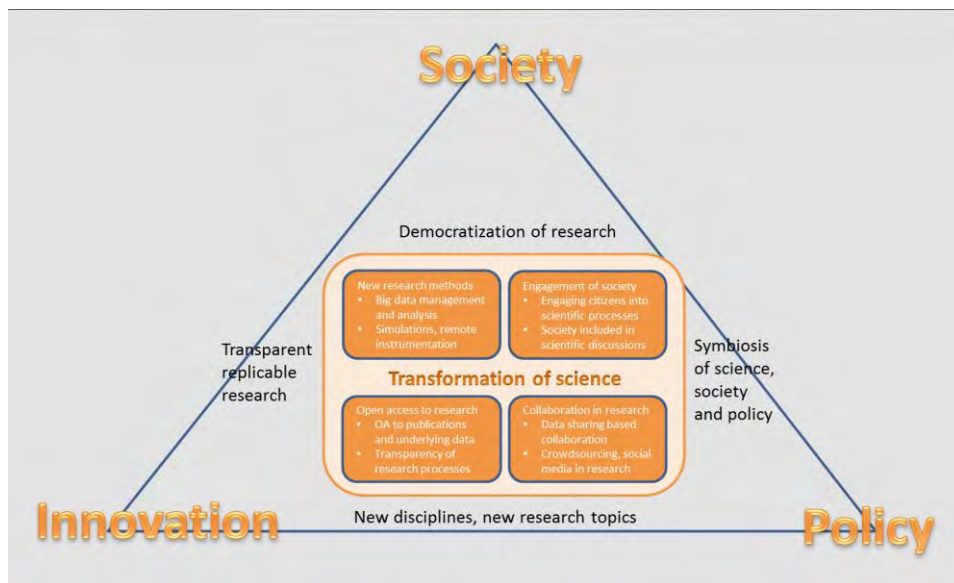


to boost Europe's innovation capacity, competitiveness and jobs



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

# Open Science



Digital Single Market ©

- Dedicated support for open access to scientific publications, to knowledge repositories and other data sources (as open as possible, as closed as necessary)
- Leading to better dissemination, exploitation and diffusion of knowledge and practices.
- Citizen science could play a valuable role.
- Responsible research data management in line with FAIR principles (data management plans, WPs, European Open Science Cloud)
- Additional incentives (reward schemes) or obligations, reciprocity in cooperation with third countries



# Sustainable development goals

- A set of 17 SDGs and 169 associated targets.
- Reference point to prioritize and reshape R&I agenda
- Multilateral initiatives, Synergies with other programmes
- Strategic alliances and networks
- Collaboration between top researchers and innovators, knowledge-intensive companies
- Diversify the global flow of knowledge, increase innovation capacity
- Role of science diplomacy

## SUSTAINABLE DEVELOPMENT GOALS



*“Greater impact can be obtained through **aligning actions with other nations and regions of the world within international cooperation along the lines indicated by the United Nations 2030 Agenda for Sustainable Development and the Sustainable Development Goals and the Paris climate agreement.** Based on mutual benefit, partners from across the world will be invited to join EU efforts as an integral part of research and innovation for sustainable development”.*

# Clusters

## Contribution to SDGs

- **Health:** SDG 3 – Good Health and Well-Being for People; SDG13 – Climate Action
- **Culture, creativity and inclusive society:** SDG 1 - No Poverty; SDG 3 – Good Health and Well-Being for People; SDG 4 - Quality Education; SDG 5 - Gender Equality; SDG 8 – Decent Work and Economic Growth; SDG 9 – Industry, Innovation and Infrastructure; SDG 10 - Reducing Inequalities; SDG 11- Sustainable Cities and Communities; SDG 16 – Peace, Justice and Strong Institutions
- **Civil Security for Society:** SDG 16 – Peace, Justice and Strong Institutions
- **Digital, Industry and Space:** SDG 8 - Decent Work and Economic Growth; SDG 9 - Industry, Innovation and Infrastructure; SDG 12 - Responsible Consumption and Production; SDG-13 Climate Action
- **Climate, Energy and Mobility:** SDG 6 - Clean water and sanitation; SDG 7 - Affordable and Clean Energy; SDG 9 - Industry, Innovation and Infrastructure; SDG 11 - Sustainable Cities and Communities; SDG 12 – Responsible consumption and production; SDG 13 - Climate Action
- **Food, Bioeconomy, Natural Resources, Agriculture and Environment:** SDG 2 – Zero Hunger; SDG 3 – Good Health and Well-Being; SDG 6 - Clean Water and Sanitation; SDG 8 – Decent Work and Economic Growth; SDG 9 – Industry, Innovation, and Infrastructure; SDG 11 – Sustainable Cities and Communities; SDG 12 - Responsible Consumption and Production; SDG 13 – Climate Action; SDG 14 – Life Below Water; SDG 15 - Life on Land

# R&I Missions

- Adaptation to Climate Change, including Societal Transformation
- Cancer
- Healthy Oceans, Seas, Coastal and Inland Waters
- Climate-neutral and Smart Cities
- Soil Health and Food



## 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 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)



# Missions: main features

- Should have societal relevance
- Should be targeted, measurable and time-bound
- Ambitious and realistic
- Cross-disciplinary, cross-sectoral and cross-actor innovation
- Multiple, Bottom-up solutions
- Public participation in selection and implementation
- Steering economic growth, policy support, supporting European competitiveness
- Innovative spillovers might not be known beforehand by applicants
- Flexibility
- Broad (engage stakeholders) but also focused (measurable success)
- Set the direction but do not specify how to achieve success
- Solved by a portfolio of projects
- Contribute to SDGs or societal challenges
- Fundamental and applied research, experimentation

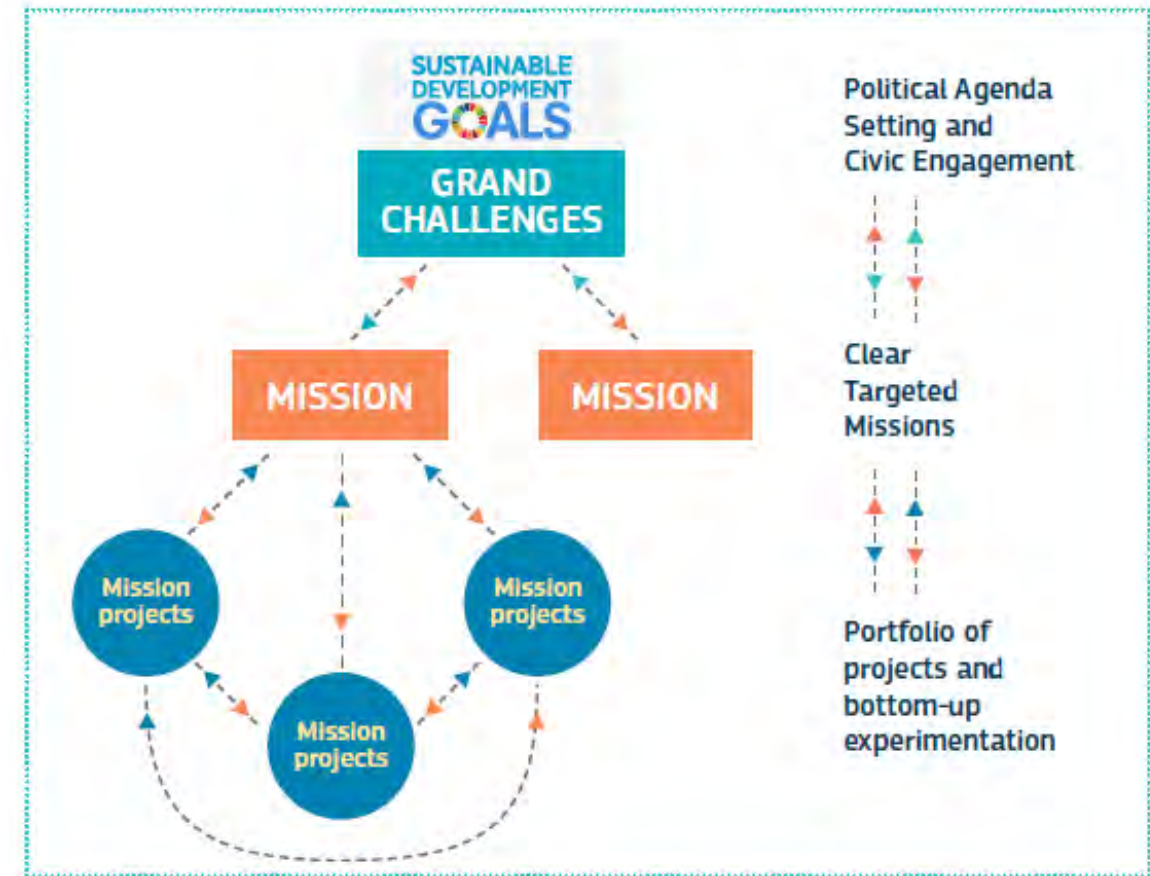


Figure 1. From Challenges to Missions Image: RTD - A.1 based on Mazzucato (2017)

*Mission Boards being established\**

# International cooperation

- Tackling global challenges together, exchange and pooling of talents, know-how, expertise and resources, joint creation of innovative solutions
- More countries can become associated countries
- Complementarities and synergies with the EU's external cooperation and trade policies for stronger research links, evidence-based policy making and uptake of R&I results
- Targeted actions (flagship initiatives, joint calls)
- International cooperation in all clusters (WHO, UN, OECD, GEO)
- Cross-border cooperation and integration of R&I, better alignment of actions
- New forms of partnerships

## Focus on Innovation in Horizon Europe

- Transforming leadership in science into **leadership in innovation and entrepreneurship...**
- Ensuring essential investment and **stimulating private investment...**
- Becoming a front runner in market-creating innovation....
- **Helping innovators create markets of the future, leverage private finance, scale up their companies...**
- Investing in skills and **empower universities to become more entrepreneurial** and interdisciplinary....
- Boosting the **digital transformation...**
- Involvement of accelerators, investors, startups and scaleups...



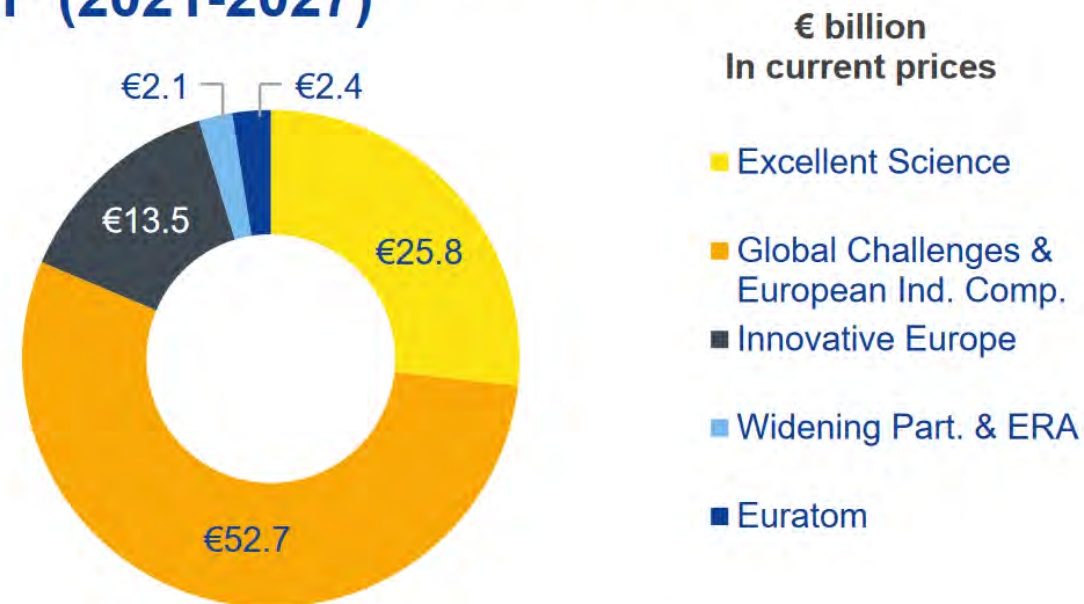


# Horizon Europe: The Pillars

# Budget for Pillars

- Additional EUR 4.1 billion is proposed for research within the new European Defence Fund
- More budget for innovation
- R&I Days – Universities asked for budget increase for research activities

## Commission proposal for budget: €100 billion\* (2021-2027)



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

# PILLAR 1: EXCELLENT SCIENCE

## 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

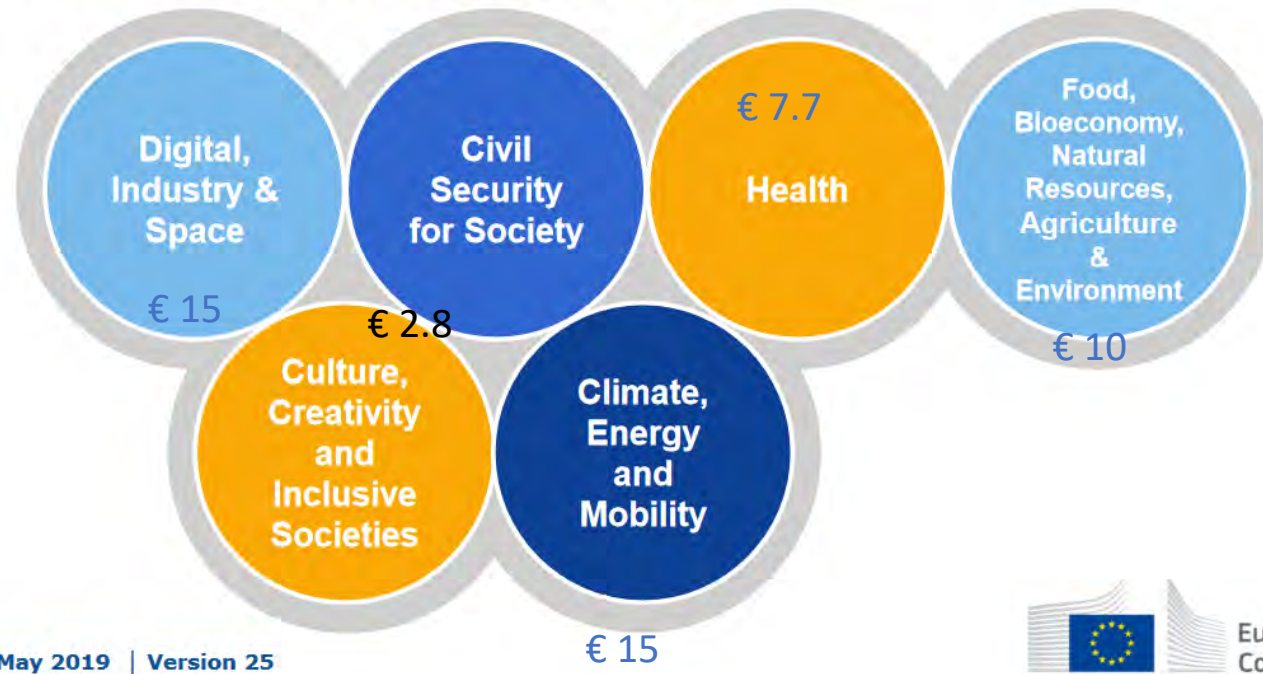
€ 2.4 billion

Building on the success of the European Research Council, the Marie Skłodowska-Curie Actions and the Research Infrastructures, the pillar adds more resources for projects with higher impacts. The projects are selected through a "bottom-up" approach, are defined and driven by researchers and networks and are evaluated on the sole criterion of excellence. **The goal is to nurture innovation and entrepreneurship in education across Europe to provide the skills and competences needed to make Europe more competitive on a global scale.**



# PILLAR 2: Global Challenges and European Industrial Competitiveness

Commission proposal for budget: € 52.7 billion



May 2019 | Version 25

It is built on clusters that aim at exploiting European strengths and assets by **generating new knowledge and translating it into useful innovations**, developing and applying digital and key enabling technologies along with a new mission approach.

This will further ensure that Research & Innovation activities support EU policy priorities in areas such as the achievement of the **Sustainable Development Goals**, the **Societal Challenges**. Industrial leadership will be prominent within the pillar and through the programme as whole.

Clusters will be implemented through usual calls, **missions & partnerships**

# Clusters

## Areas of Intervention

- **Health:** Health throughout the Life Course, Environmental and Social Health Determinants, Non-Communicable and Rare Diseases, Infectious Diseases, including poverty-related and neglected diseases; Tools, Technologies and Digital Solutions for Health and Care, including personalised medicine, Health Care Systems, Maintaining an innovative, sustainable and globally competitive health industry
- **Culture, creativity and inclusive society:** Democracy and Governance, Cultural Heritage, Social and Economic Transformations
- **Civil Security for Society:** Disaster-Resilient Societies, Protection and Security, Cybersecurity
- **Digital, Industry and Space:** Manufacturing Technologies, Key Digital Technologies, Emerging enabling technologies, Advanced Materials, Artificial Intelligence and Robotics, Next Generation Internet, Advanced Computing and Big Data, Circular Industries, Low-Carbon and Clean Industries, Space, including Earth Observation
- **Climate, Energy and Mobility:** Climate Science and Solutions, Energy Supply, Energy Systems and Grids, Buildings and Industrial Facilities in Energy Transition, Communities and Cities, Industrial Competitiveness in Transport, Clean, Safe and Accessible Transport and Mobility, Smart Mobility, Energy Storage
- **Food, Bioeconomy, Natural Resources, Agriculture and Environment:** Environmental Observation, Biodiversity and Natural Resources, Agriculture, Forestry and Rural Areas, Seas, Oceans and Inland Waters, Food Systems, Bio-based Innovation Systems in the EU Bioeconomy, Circular Systems

# PILLAR 3 Innovative Europe

## 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

This new pillar will offer a one-stop shop for **high potential innovators**, aiming to put Europe at the forefront of **market-creating innovation** through a "bottom-up" approach.

It will **develop future breakthrough technologies** and **attract innovative companies with potential for scaling up at international and European levels.**

# Widening participation and strengthening the ERA

- ERA Chairs
- Teaming and twinning
- COST (integration under widening)
- Support to NCPs
- Initiatives for networking (brain circulation and excellence)
- “Hop-on”
- Synergies with ESIF

3,3% of Horizon Europe budget

Changes under discussion:

- Research activities and equipment are eligible
- Focus on improving research management skills (WP)
  - Added value compared to previously funded projects
  - Further simplification
- “Advancing Europe” package with additional support schemes to boost participation of less research performing countries

**Horizontal activities:** evidence and foresight, Open Science, Policy Support Facility, supporting research careers, emphasis on citizen science, RRI and gender equality



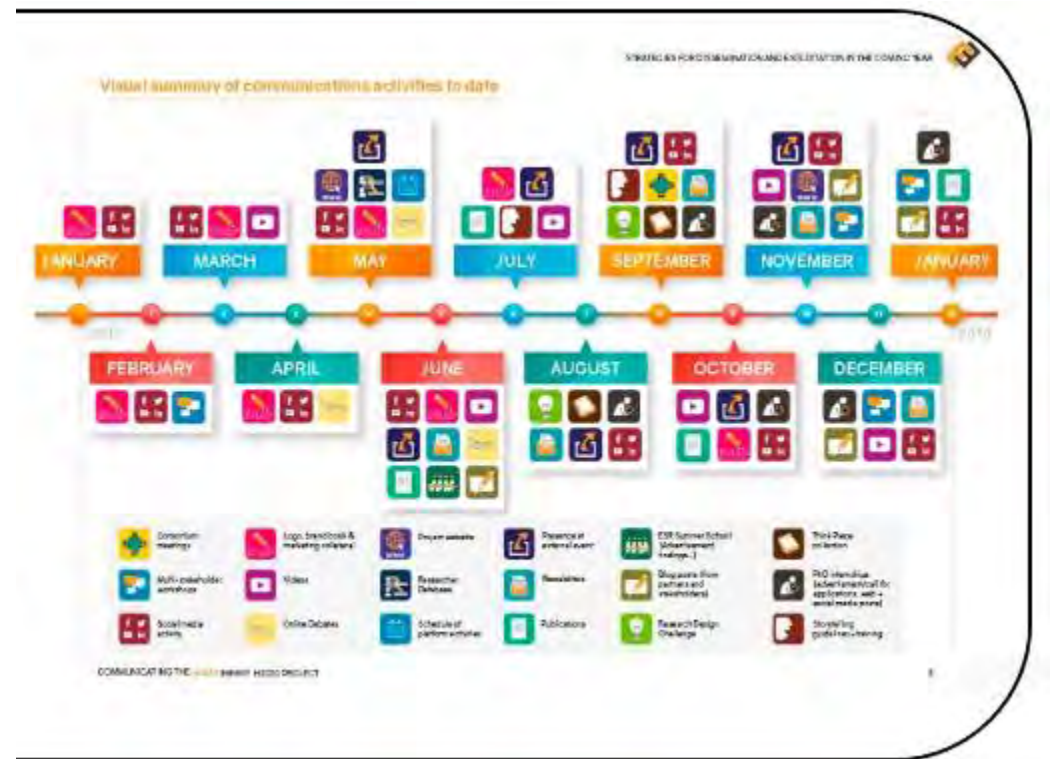
# Reporting



- „On the financial reporting side, the proven trust-based and risk-assessing approach of Horizon 2020 will be continued, requiring a limited standard set of data and information for all projects, with the possibility to ask for more details in individual cases, based on a risk assessment”
- „Specific focus will be put on enhancing the quality of the data collected through the various forms and reporting templates. This initiative aims at providing close to real time and quality data for reporting and analytical purposes, reducing data maintenance costs and enhancing data integration. To this extent, the Commission intends to enhance e-forms and reporting templates used by beneficiaries”

# Dissemination and Exploitation

- „Flagship activities have been carried out to date, such as the [Horizon Impact Award contest](#),
- [Dissemination](#) & [Exploitation](#) boosters
- Horizon Results Platform
- Adapting the reporting templates
- Incentives for continued reporting
- Enhanced guidance and support to applicants
- Enhanced D&E support to projects
- Fostering synergies
- Strengthening feedback to policy



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# Q&A SESSION

**Please use the Q&A panel to submit your questions.**



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# THANK YOU FOR YOUR ATTENTION

**The slides and webinar recording will be shared in a follow up mailing.**