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# HORIZON 2020

**The EU Framework Programme  
for Research and Innovation**

**2014-2020**



# The Multiannual Financial Framework 2014-2020:

**Key challenge:** stabilise the financial and economic system while taking measures to create economic opportunities

## 1. Smart & inclusive growth\* (€451 billion)



## 2. Sustainable growth, natural resources (€373 billion)

## 3. Security and citizenship (€16 billion)

## 4. Global Europe (€58 billion)

## 5. Administration (€61.6 billion)



(figures are given in constant prices)

# What is Horizon 2020?

- **The European Union programme for research and innovation for 2014-2020 with a budget of €77 billion (in current prices that include inflation, comprising both the TFEU and Euratom parts)**
- **A core part of Europe 2020, Innovation Union & European Research Area:**
  - Responding to the economic crisis to invest in jobs and growth
  - Addressing people's concerns about their livelihoods, safety and environment
  - Strengthening the EU's global position in research, innovation and technology

# What is new?

- **A single programme** bringing together three separate programmes/initiatives\*
- **Coupling research to innovation** – from research to retail, all forms of innovation
- **Focus on societal challenges** facing EU society, e.g. health, clean energy and transport
- **Simplified access**, for all companies, universities, institutes in all EU countries and beyond

\* The 7<sup>th</sup> Research Framework Programme (FP7), innovation aspects of Competitiveness and Innovation Framework Programme (CIP), EU contribution to the European Institute of Innovation and Technology (EIT) – There is a separate programme for Euratom activities

# Three priorities



# **Priority 1.**

## **Excellent science**

### **Why:**

- **World class science is the foundation of tomorrow's technologies, jobs and wellbeing**
- **Europe needs to develop, attract and retain research talent**
- **Researchers need access to the best infrastructures**

## Funding for Excellent science (€ million)

<b><i>European Research Council (ERC)</i></b> Frontier research by the best individual teams	<b>13 095</b>
<b><i>Future and Emerging Technologies</i></b> Collaborative research to open new fields of innovation	<b>2 585</b>
<b><i>Marie Skłodowska-Curie actions (MSCA)</i></b> Opportunities for training and career development	<b>6 162</b>
<b><i>Research infrastructures</i></b> <i>(including e-infrastructure)</i> Ensuring access to world-class facilities	<b>2 390</b>

## **Priority 2. Industrial leadership**

### **Why:**

- **Strategic investments in key technologies (e.g. advanced manufacturing, micro-electronics) underpin innovation across existing and emerging sectors**
- **Europe needs to attract more private investment in research and innovation**
- **Europe needs more innovative small and medium-sized enterprises (SMEs) to create growth and jobs**



## Funding for Industrial leadership (€ million)

<b><i>Leadership in enabling and industrial technologies (LEITs)</i></b> (ICT, nanotechnologies, materials, biotechnology, manufacturing, space)	<b>13 035</b>
<b><i>Access to risk finance</i></b> Leveraging private finance and venture capital for research and innovation	<b>2 842</b>
<b><i>Innovation in SMEs</i></b> Fostering all forms of innovation in all types of SMEs	<b>589</b> + complemented by a minimum of 20% of the total budget for societal challenges + LEITs and <b>'Access to risk finance'</b> with strong SME focus

## **Priority 3. Societal challenges**

### **Why:**

- **Concerns of citizens and society/EU policy objectives (climate, environment, energy, transport, etc) cannot be achieved without innovation**
- **Breakthrough solutions come from multi-disciplinary collaborations, including social sciences & humanities**
- **Promising solutions need to be tested, demonstrated and scaled up**

# Funding for Societal challenges (€ million)

<b>Health, demographic change and wellbeing</b>	<b>7 257</b>
<b>Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the Bioeconomy</b>	<b>3 708</b>
<b>Secure, clean and efficient energy *</b>	<b>5 688</b>
<b>Smart, green and integrated transport</b>	<b>6 149</b>
<b>Climate action, environment, resource efficiency and raw materials</b>	<b>2 956</b>
<b>Inclusive, innovative and reflective societies</b>	<b>1 259</b>
<b>Secure societies</b>	<b>1 613</b>
<i>Science with and for society</i>	<i>445</i>
<i>Spreading excellence and widening participation</i>	<i>816</i>

\* Additional funding for nuclear safety and security from the Euratom Treaty activities (2014-2018)

# Fast Track to Innovation pilot

- ✓ Innovation actions;
- ✓ Any technology field under 'Leadership in enabling and industrial technologies' and 'Societal challenges',
- ✓ Bottom-up-driven logic;
- ✓ Continuously open call, three cut-off dates per year in 2015-2016;
- ✓ Time to grant not exceeding six months;
- ✓ No more than five legal entities in any one action;
- ✓ Each grant shall not exceed EUR 3 million.

# Public-Public Partnerships - 1

## Joint Programmes with Member States (Art. 185)

fully integrating national programmes at three levels

- Scientific
- Financial between Member States and Union
- Management: **single implementation structure**

### Currently:

- ✓ Active and Assisted Living Joint Programme
- ✓ European & Developing Countries Clinical Trials Partnership
- ✓ European Programme for Metrology Research and Innovation
- ✓ Eurostars for R&D performing SMEs
- ✓ Joint Baltic Sea Research & Development Programme (BONUS)

# Public-Public Partnerships - 2

## ERA-NET cofund:

- Support of public-public partnerships in preparation, implementation and coordination of joint activities
- Union topping-up of a transnational call for proposals (EU contribution proportional to total public funding for the call)

## Examples:

- ✓ E-Rare, ERA-NET for Research Programmes on Rare Diseases, [www.erare.eu](http://www.erare.eu)
- ✓ M-ERA.NET, coordination of European research programmes and related funding in materials science and engineering, [www.m-era.net](http://www.m-era.net)

# Public-Public Partnerships – 3

## Joint Programming Initiative (JPI)

- Member States engage voluntarily and on a variable geometry basis in definition, development and implementation of common strategic research agenda
- May involve collaboration between existing national programmes or setting up of entirely new ones
- Possible Horizon2020 support through CSA or ERA-NET

### Examples:

- ✓ Neurodegenerative Diseases (Alzheimer's) - France
- ✓ Healthy Diet for a Healthy Life - Netherlands
- ✓ Cultural Heritage and Global Change: a New Challenge for Europe - Italy

# Public-Private Partnerships - 1

## Joint Technology Initiative (JTI – Art. 185)

- Commitments (including financial) of Union and industry partners over seven year period
- Strategic research and innovation agenda & funding through open calls
- Implemented through **Joint Undertakings**

### Currently:

- ✓ Clean aircraft - Clean Sky 2 (CS)
- ✓ Fuel Cells and Hydrogen 2 (FCH)
- ✓ Innovative Medicines 2 (IMI)
- ✓ Electronic components and systems (ECSEL)
- ✓ Bio-based Industries (BBI)
- ✓ Shift2Rail (S2R)



# Public-Private Partnerships - 2

## Contractual Public-Private Partnerships (cPPP)

- Memorandum signed between respective industry grouping and Commission
- Commission obligations implemented through open calls under Horizon 2020
- Complemented with private investment by industry

### Currently:

- |                                        |                              |
|----------------------------------------|------------------------------|
| ✓ Factories of the Future              | Infrastructure for Future    |
| ✓ Energy-efficient Buildings           | Internet                     |
| ✓ European Green Vehicles Initiative   | ✓ High Performance Computing |
| ✓ Sustainable Process Industry (SPIRE) | ✓ Robotics                   |
| ✓ Advanced 5G network                  | ✓ Photonics                  |
|                                        | ✓ Big Data                   |

# EURATOM

**Budget:** €1 044 million to support indirect research actions in nuclear fission, radiation protection and fusion activities

**Duration of the Programme:** 5 years (2014-2018), in line with the Euratom Treaty

## What is new?

- Euratom Programme complements Horizon 2020 and addresses the same key challenges;
- The same rules for participation apply to Horizon 2020 and Euratom Programme;
- A streamlined fusion research programme focusing on the implementation of the fusion roadmap;
- Only one legal act, instead of four.

# European Institute of Innovation and Technology (EIT)

- Body of the European Union based in Budapest
- Integrates all three sides of the knowledge triangle (higher education, research and business) by so-called **Knowledge and Innovation Communities (KIC)**
- Budget of € 2 383 billion from Horizon 2020

## Current KICs

- ✓ Climate
- ✓ ICT labs
- ✓ InnoEnergy
- ✓ Raw Materials
- ✓ Health

## In pipeline

- ✓ Food4future; Added-Value Manufacturing (2016)
- ✓ Urban Mobility (2018)

# Joint Research Center (JRC)

- Provides customer-driven scientific and technical support to Union policies while flexibly responding to new policy demands
- Carries out direct actions under both the TFEU and Euratom parts of Horizon 2020
- Budget of € 2 416 billion from Horizon 2020

# Simplification

## ...in the design of Horizon 2020

- ✓ **Same set of rules for all actions** (very few exceptions)
- ✓ **One project – one funding rate** (max. 100% of total eligible costs, except for innovation actions, where a 70% maximum applies for profit making entities; indirect eligible costs: flat rate of 25% of direct eligible costs)
- ✓ **Shorter time-to-grant** (8 months)
- ✓ **Simpler rules for grants** (e.g. broader acceptance of participants accounting practices for direct costs; no time-sheets for personnel working full time on a project)
- ✓ **Fewer, better targeted controls and audits**
- ✓ **Participant Portal** – the single gateway for all exchanges in managing grants and experts
- ✓ **Fully paperless management** of grants and expert contracts

## ... as a continuous effort.

# Strong participation by SMEs

- **Integrated approach** - a minimum of 20% of the total budget for societal challenges and LEITs to go to SMEs
- **A new SME instrument** - a minimum of 7 % of the total budget for societal challenges and LEITs
- A dedicated activity for research-intensive SMEs in **'Innovation in SMEs'**
- **'Access to risk finance'** will have a strong SME focus (debt and equity facility)
- **Simplification** with particular benefits for SMEs (e.g. single entry point)

# Socio-economic sciences and humanities (SSH)

- **Integrated approach:** SSH included as an integral part of the activities, working beyond 'silos' (e.g. understanding the determinants of health and optimising the effectiveness of healthcare systems)
- The '**Inclusive, innovative and reflective societies**' challenge: issues such as smart and sustainable growth, social transformations, social innovation and creativity, the position of Europe as a global actor
- **Bottom-up funding:** ERC, MSCA, Research Infrastructures

# Widening participation

- **Principle of excellence:** continue to allocate funding on the basis of competitive calls, selecting only the best projects
- **Clear division of labour** between cohesion policy and Horizon 2020
  - ✓ Cohesion policy: support for regions in building up their research and innovation capacity
  - ✓ Horizon 2020: widen participation, better coordination between the two Union funding programmes, support policy learning reforms
- **Accompanying measures in Horizon 2020** to ensure that excellence prevails wherever it exists, including: twinning, ERA chairs, support for access to international networks, development of smart specialisation strategies



# International cooperation

- **International cooperation is crucial** to address many Horizon 2020 objectives
- **Principle of general openness:** the programme will remain to be the most open funding programme in the world
- Horizon 2020 shall be open to the **association** of: acceding countries, candidate countries and potential candidates and selected international partner countries that fulfil the relevant criteria (capacity, track record, close economic and geographical links to the Union, etc.) – see list of associated countries at [http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/3cp/h2020-hi-list-ac\\_en.pdf?\\_ga=2.158655886](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/3cp/h2020-hi-list-ac_en.pdf?_ga=2.158655886)
- Targeted actions to be implemented taking **a strategic approach to international cooperation** (dedicated measures in the 'Inclusive, innovative and reflective societies' challenge)

# Horizon 2020: the first 100 calls

- **Successful implementation of biennial work programme** with broader and fewer topics and embedding key features and novelties like SSH
- **Over € 15 billion funding over first two years (2014-2015)**
- In total, **more than 36 000 proposals evaluated** and **over 3200 projects started**
- **Robust and user-friendly IT systems and Participant Portal** (just over 3 million visits per month)
- **Simplified business processes** helping to achieve implementation targets like shortened time-to-grant

# For further information

- **Participant Portal**

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

- **Helpdesk**

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

- **Expert evaluators needed!**

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

- **Learn more about Horizon 2020**

<http://ec.europa.eu/horizon2020>



# HORIZON 2020

**Thank you  
for your attention!**

**Find out more:**  
[www.ec.europa/research/horizon2020](http://www.ec.europa/research/horizon2020)

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