

# Horizon 2020 Work Programme from 2018 to 2020

## **What is in the new Work Programme?**

Spanning seven years (2014 – 2020) and with a budget of €77 billion, Horizon 2020 is the biggest EU research and innovation funding programme ever. It is implemented via multi-annual work programmes.

Today, the European Commission presents the final Work Programme for Horizon 2020, covering the budgetary years 2018, 2019 and 2020 and representing an investment of around €30 billion.

The vast majority of this funding is allocated on the basis of competitive calls which are open to applications from researchers, businesses and other interested organisations located in any of the EU Member States or countries [associated](#) to Horizon 2020. Organisations from third countries can also participate in the projects, subject to certain conditions. All funding opportunities and related information is available on a single [portal](#).

## **What are the new features of the Work Programme?**

The 2018-2020 Work Programme builds on the success of Horizon 2020 so far, and takes account of the extensive [interim evaluation](#) of the programme. The Work Programme also responds to the European Commission's [political priorities](#) and paves the way for its successor programme.

The new features include measures to support market-creating innovation, highly integrated activities called focus areas, emphasis on better dissemination of results and a focus on open access to data. The Work Programme also includes measures to increase simplification (e.g. lump sum funding), to widen participation from less performing countries, and to address skills mismatches.

## **What will the Work Programme focus on?**

### 1. Market creating innovation

The Work Programme introduces measures to support market creating innovation, through a first phase of a **European Innovation Council (EIC)**. This will be open to innovations in any technology or sector including novel innovations that cut across technologies and sectors.

The first phase of the EIC will support innovative firms and entrepreneurs to scale up their businesses rapidly at European and global levels, and help Europe better capture innovative ideas with the potential to create new markets and strengthen the industrial base.

With a budget of €2.7 billion, it brings together existing instruments: the SME Instrument, inducement prizes, FET-Open and Fast Track to Innovation.

Further changes include making the SME instrument fully 'bottom up' so that innovative projects that cut across sectors and technologies can be supported.

For funding under the SME instrument (in Phase 2: support further development of innovative projects through activities such as testing, piloting or scaling up), the Commission also plans to introduce face-to-face interviews to the proposal evaluation system.

## 2. Political priorities

The Work Programme aims to address political priorities of the Commission through defining targeted research and innovation actions that can deliver significant impact.

'**Focus areas**' have been designed around four political priorities: a low-carbon, climate resilient future; circular economy; digitising and transforming European industry and services; and security union. These focus areas are 'virtual calls' that cut across several parts of the Work Programme and that are endowed with a substantial budget. Focus areas are expected to create an **exceptional impact**, addressing 'big ticket' challenges.

- '**Building a low Carbon, Climate-resilient Future**' (budget of **€3.3 billion**), will align R&I investments with the climate change objectives of the [Paris Climate Agreement](#) as well as with the United Nations' [Sustainable Development Goals](#) (SDGs). The focus area will support the development of solutions to achieve carbon neutrality and climate resilience by the second half of the century. As part of this focus area, R&I actions will support Europe's implementation of the [Energy Union](#). Over €2 billion will be invested in the four strategic priorities identified in the [Accelerating Clean Energy Innovation](#) Communication, namely renewables, energy efficiency in buildings, electro-mobility and energy storage solutions. The energy storage solutions will have an emphasis on the next generation of **batteries (budget €200 million)**, which will play an essential role in the transformation of our society towards less dependency on fossil fuels and radical reduction of emissions.
- '**Connecting economic and environmental gains – the Circular Economy**' (budget of **€941 million**) will support the Commission's ambitious Circular Economy package. Through R&I actions a strong contribution will be made to sustainable development goals, climate action, resource efficiency, jobs and growth and industrial competitiveness.
- '**Digitising and transforming European industry and services**' (budget of **€1.7 billion**) will address the combination of digital technologies (5G, high-performance computing, artificial intelligence, robotics, big data, Internet of Things, etc.) with innovations in other technological areas, as emphasised in the [Digital Single Market](#) strategy. This field offers huge opportunities for increasing industrial competitiveness, to create growth and jobs and to address societal challenges such as personalised

medical treatments, more secure and efficient mobility, food security and sustainable use of natural resources, cleaner energy and security. In addition, a particular emphasis will be put on cybersecurity and on addressing the societal impact of the digital transformation.

- **'Boosting the effectiveness of the Security Union' (budget of €1 billion)**, will support the implementation of Security Union priorities such as preventing and fighting serious crime including terrorism, improving border security and protecting infrastructure against threats, including cyber-attacks. Research on security threats, in particular terrorism, cybercrime, natural and man-made disasters and hybrid threats, will underpin an innovative, effective and coordinated EU response to mitigate risks and their potential impact on European society. Horizon 2020 represents 50% of overall public funding for security research in the EU.
- **Migration** is a political priority which will receive dedicated support through the Work Programme. Although not defined as a focus area (the financial contribution comes from a single part of the Work Programme), more than **€200 million** will support research on issues such as the root causes of irregular migration, migration management and integration of migrants in host societies. The results will feed into the implementation of the [European Agenda on Migration](#).

### 3. Strengthening international R&I cooperation

Cooperation is necessary to ensure the EU's scientific leadership and industrial competitiveness. By collaborating on an international scale, the EU can better deliver on global commitments in line with its external policies. The Work Programme includes around **30 flagship initiatives** on topics dedicated to international cooperation in areas of mutual benefit, comprising a total budget of **over €1 billion**. Examples include:

- Canada – personalised medicine
- Africa – food, nutrition security and agriculture, renewable energies
- All Atlantic Research Alliance
- Mission Innovation Initiative – energy
- US, Japan, South Korea, Singapore and Australia – road transport automation
- COP21 – climate change action support
- India – water challenges
- Russia – research infrastructure
- Multiple international partners – safe nanotechnology

#### What else is new?

Apart from the EIC pilot, the final Horizon 2020 Work Programme will also pilot several other new features:

- **Lump-sum** pilot constitutes a new approach to cost reimbursement from a control-based to a trust-based system. Together with a bigger number of two-stage calls, this measure will reduce administrative burden and make the programme simpler for its users.
- **Widening fellowships** pilot adds to the range of tools that contribute to

narrowing the 'innovation divide' in Europe and putting more places on the map of excellent research and innovation. Through the **Spreading Excellence and Widening Participation** part of the programme, specific support will now be offered to researchers to undertake a [Marie Skłodowska-Curie fellowship](#) in a country that could do better in terms of participation in Horizon 2020.

- A disruptive innovation pilot will offer dedicated support to exceptionally promising, high-impact **clean energy technologies** to make the crucial final step to the market. The first series of projects will aim to crack two specific challenges in renewable energy: photovoltaic windows and the biological conversion of CO<sub>2</sub> and renewable hydrogen to fuels.
- An **ICT pilot using the mechanism of ERASMUS+** will address skills mismatches, including a shortage of specialists in information and communication technologies (ICT), that have emerged as a result of the fast-paced digital transformation. This scheme will support on-the-job learning for high education students and recent graduates and will be implemented through the mechanisms of Erasmus+. Starting in June 2018, the beneficiaries will undertake traineeships in the digital domain for up to five months. The pilot project is open to all Erasmus+ [Programme Countries](#) and to the Horizon 2020 [Associated Countries](#).
- **New 50% funding rate to some innovation actions with a high technology-readiness level** aims to allow larger, high-cost demonstrator projects to be funded and to leverage commitment from the industry. Replacing the standard 70% funding rate for innovation actions, this 50% funding rate is piloted on a limited number of topics in the part of the programme covering Nanotechnologies, Advanced Materials, Advanced Manufacturing and Processing, and Biotechnology.

### **How are Open Innovation, Open Science and Open to the World reflected?**

**Open Innovation** –aiming to make the most of Europe's innovation talent and enable a wider transformation of knowledge into products and services that create new markets – is supported in many parts of the programme. Apart from the main novelty, the first phase of the European Innovation Council, with a budget of €2.7 billion, the Work Programme will fund several Open Innovation test beds with over €200 million, as well as around 30 topics in the Societal Challenges pillar with around €300 million. A new 'multi-actor' approach aims to include all relevant stakeholders.

**Open Science** – the Commission's core strategy to improve knowledge circulation and thus innovation – is promoted throughout the Work Programme, in particular the open research data approach, and the creation of a [European Open Science Cloud](#) that will offer Europe's 1.7 million researchers and 70 million science and technology professionals a virtual environment to store, share and re-use their data across disciplines and borders.

**Open to the World** – maximising international cooperation for mutual benefit as well as tapping into global talent, innovation networks and value chains – is promoted mainly by flagship initiatives in areas of mutual interest. Numbering around 30 in total, they will work with a budget of over **€1 billion**. Europe's [Outermost Regions](#) will also receive dedicated support.

There will be an increased effort to enhance mobility paths for European researchers as well as to attract researchers to Europe.

### **How is Horizon 2020 funding allocated?**

The Work Programme sets out a number of calls which contain predefined topics, together with the relevant budgets, conditions, and closing dates for applications. Applications are assessed by independent expert evaluators against the criteria defined in the work programme. Grant agreements are concluded with the successful applicants within a deadline which is normally eight months from call deadline.

All funding opportunities under Horizon 2020 are accessible from the [Participant portal](#).

### **What is the remaining budget of Horizon 2020?**

The total remaining budget for the last three years of Horizon 2020 (2018, 2019 and 2020) is €37.1 billion.

Of this budget, €7.1 billion is not included in the work programme as it is managed through various public-private partnerships (€3.6 billion), public-public partnerships (€0.9 billion), the European Institute of Technology (€1.4 billion) and the in-house activities of the Commission's Joint Research Centre (€0.1 billion).

The €30 billion of the Horizon 2020 Work Programme 2018-2020 adopted today includes the Marie Skłodowska-Curie Actions (€2.8 billion) and Access to Risk Finance (€1.4 billion). This amount also includes the support to the ERC (€6 billion) which was presented in a separate [ERC Work Programme](#) in August. A separate Work Programme was also presented today for research carried out within the framework of the [Euratom Treaty](#).

### **For More Information**