

Horizon 2020



Introduction

Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness by coupling research and innovation. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation. Horizon 2020 is open to everyone, with a simple structure that reduces red tape and time so participants can focus on what is really important. This approach makes sure new projects get off the ground quickly – and achieve results faster.

Horizon 2020 is an integrated Programme which covers all research and innovation funding that was provided through the Framework Programme for Research and Technological Development, the Competitiveness and Innovation Framework Programme (CIP) and the European Institute of Innovation and Technology (EIT) during the previous Programming Period 2007-2013. The different types of funding provided by the previous Programmes has been brought together into a single coherent, flexible framework and is intended to provide funding for every stage of the innovation process from basic research to market uptake.

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

Open Calls

The European Commission has for the first time presented calls for projects under Horizon 2020 in December 2013. Worth more than €15 billion over the first two years, the funding is intended to help boost Europe's knowledge-driven economy, and tackle issues that will make a difference in people's lives.

The following are the key pillars of Horizon 2020:

- ✓ Excellent Science
- ✓ Industrial Leadership
- ✓ Societal challenges
- ✓ Spreading Excellence and widening participation

The following are the HORIZON 2020 Programme Sections:

Sub-theme: EXCELLENT SCIENCE

Activities under this Pillar aim to reinforce and extend the excellence of the Union's science base and to consolidate the European Research Area in order to make the Union's research and innovation system more competitive on a global scale. The Excellent Science pillar has main four specific objectives:

- The European Research Council (ERC) will provide attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, on the basis of Union-wide competition.
- Future and emerging technologies will support collaborative research in order to extend Europe's capacity for advanced and paradigm changing innovation.
- Marie Skłodowska-Curie Actions will provide excellent and innovative research training as well as attractive career and knowledge exchange opportunities.
- Research infrastructure (including e-infrastructures) will develop European research infrastructure for 2020 and beyond, foster their innovation potential and human capital, and complement this with the related Union policy and international cooperation.

Budget

€24,44 billion

Level of Financing (EU co-financing rate)

- Coordination and Support actions 100%
- Research and Innovation actions 100%
- Innovation actions 70% (except for non-profit legal entities - 100%)
- Pre-commercial procurement (PCP) Co-fund 70%
- Public procurement of Innovative solutions (PPI) Co-fund 20%

Sub-theme: INDUSTRIAL LEADERSHIP

This pillar aims to speed up development of the technologies and innovations that will underpin tomorrow's businesses and help innovative European SMEs to grow into world-leading companies. It consists of three specific objectives:

- "Leadership in enabling and industrial technologies" will provide dedicated support for research, development and demonstration and, where appropriate, for standardisation and certification, on information and communications technology (ICT), nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space.
- "Access to risk finance" will aim to overcome deficits in the availability of debt and equity finance for R&D and innovation-driven companies and projects at all stages of development.
- "Innovation in SMEs" will provide SME-tailored support to stimulate all forms of innovation in SMEs, targeting those with the potential to grow and internationalise across the single market and beyond.

Budget

€17,02 billion

Level of Financing (EU co-financing rate)

- ERA-NET (Co-fund) 33%
- Coordination and Support actions 100%
- Research and Innovation actions 100%
- Innovation actions 70% (except for non-profit legal entities - 100%)

Sub-theme: SOCIETAL CHALLENGES

A challenge-based approach will bring together resources and knowledge across different fields, technologies and disciplines, including social sciences and the humanities. This will cover activities from research to market with a new focus on innovation-related activities, such as piloting, demonstration, test-beds, and support for public procurement and market uptake. It will include establishing links with the activities of the European Innovation Partnerships (EIP). Funding will focus on the following challenges:

- a) Health, demographic change and well-being.
- b) Food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the bio economy.
- c) Secure, clean and efficient energy.
- d) Smart, green and integrated transport.
- e) Climate action, environment, resource efficiency and raw materials.
- f) Europe in a changing world - Inclusive, innovative and reflective societies.
- g) Secure societies - Protecting freedom and security of Europe and its citizens.

Budget

€29,68 billion

Level of Financing (EU co-financing rate)

- ERA-NET (Co-fund) 33%
- Coordination and Support actions 100%
- Research and Innovation actions 100%
- Innovation actions 70% (except for non-profit legal entities - 100%)

Sub-theme: SCIENCE WITH AND FOR SOCIETY

The aim is to build effective cooperation between science and society, to recruit new talent for science and to pair scientific excellence with social awareness and responsibility.

The focus of activities shall be to:

- a) make scientific and technological careers attractive to young students, and foster sustainable interaction between schools, research institutions, industry and civil society organisations;
- b) promote gender equality in particular by supporting structural changes in the organization of research institutions and in the content and design of research activities;
- c) integrate society in science and innovation issues, policies and activities in order to integrate citizens' interests and values and to increase the quality, relevance, social acceptability and sustainability of research and innovation outcomes in various fields of activity from social innovation to areas such as biotechnology and nanotechnology;
- d) encourage citizens to engage in science through formal and informal science education, and promote the diffusion of science-based activities, namely in science centers and through other appropriate channels;
- e) develop the accessibility and the use of the results of publicly-funded research;
- f) develop the governance for the advancement of responsible research and innovation by all stakeholders (researchers, public authorities, industry and civil society organisations), which is sensitive to society needs and demands, and promote an ethics framework for research and innovation;
- g) take due and proportional precautions in research and innovation activities by anticipating and assessing potential environmental, health and safety impacts;
- h) improve knowledge on science communication in order to improve the quality and effectiveness of interactions between scientists, general media and the public.

Budget

€462 million

Level of Financing (EU co-financing rate)

Coordination and Support actions 100%

Research and Innovation actions 100%

Innovation actions 70% (except for non-profit legal entities - 100%)

Sub-theme: SPREADING EXCELLENCE AND WIDENING PARTICIPATION

The specific objective “Spreading excellence and widening participation” is to fully exploit the potential of Europe’s talent pool and to ensure that the benefits of an innovation-led economy are both maximised and widely distributed across the Union in accordance with the principle of excellence. Specific actions will facilitate the spreading of excellence and widening of participation through the following actions:

- Teaming of excellent research institutions and low performing in research, development and innovation (RDI) regions aiming at the creation of new (or significant upgrade of existing) centers of excellence in low performing RDI Member States and regions.
- Twinning of research institutions aiming at significantly strengthening a defined field of research in an emerging institution through links with at least two internationally-leading institutions in a defined field.
- Establishing ERA Chairs’ to attract outstanding academics to institutions with a clear potential for research excellence, in order to help these institutions fully unlock this potential and hereby create a level playing field for research and innovation in the ERA. Possible synergies with ERC activities should be explored.
- A Policy Support Facility to improve the design, implementation and evaluation of national/regional research and innovation policies.
- Supporting access to international networks for excellent researchers and innovators who lack sufficient involvement in European and international networks, including COST (European Cooperation in Science and Technology).
- Strengthening the administrative and operational capacity of transnational networks of National Contact Points, including through training, so that they can provide better support to potential participants.

Budget

€816 million

Level of Financing (EU co-financing rate)

- Framework partnership agreement 20%
- Coordination and Support actions 100%
- Research and Innovation actions 100%

SMEs in Horizon 2020

Small- and Medium-sized Enterprises (SMEs) are encouraged to participate across the whole Horizon 2020 programme. They can engage in collaborative projects as part of a consortium and they are supported through a new dedicated SME instrument designed specifically for highly innovative smaller companies. The integrated approach and simplification efforts should lead to a minimum of 20%, or about € 8.65 billion, of the total combined budgets of the specific objective 'Leadership in enabling and industrial technologies' (LEITs) and the 'Societal Challenges' going to SMEs. The SME instrument will be crucial in achieving this target. Over the course of Horizon 2020, at least € 3 billion will be allocated to the SME instrument.

The SME instrument aims to fill gaps in funding for early-stage, high-risk research and innovation by SMEs as well as stimulating breakthrough innovation. It provides easy access with simple rules and procedures. It will be used across all societal challenges and the enabling and industrial technologies specific objective. It will encourage SMEs to put forward their most innovative ideas with an EU dimension. It targets highly innovative SMEs showing a strong ambition to develop, grow and internationalize, regardless of whether they are high-tech and research-driven or non-research conducting, social or service companies. Only SMEs will be able to apply for funding. Even single company support will be possible to ensure market relevance and to increase commercialization of project results. The new instrument will integrate the specific SME R&I support of the EU Seventh Framework Programme for Research and Technological Development (FP7) and the Competitiveness and Innovation Programme (CIP) in one comprehensive, simple and easily accessible scheme. It covers the possibility to outsource research and development critical to the innovation projects of non-research intensive SMEs, as previously supported under 'Research for the Benefit of SMEs' in FP7.

More information can be found on:

http://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/Facsheet_SME_H2020.pdf

Supported Actions

- Research and innovation actions primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment. Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment.
- Innovation actions primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.
- Coordination and Support Actions consisting primarily of accompanying measures such as standardization, dissemination, awareness raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries.

Eligibility

Horizon 2020 is open besides the 27EU countries to:

- acceding countries, candidate countries and potential candidates, in accordance with the general principles and general terms and conditions for the participation of those countries in Union Programmes established in the respective framework agreements and decisions of association councils or similar agreements;
- selected third countries that fulfill all of the following criteria:
 - (i) have a good capacity in science, technology and innovation;
 - (ii) have a good track record of participation in Union research and innovation programmes;
 - (iii) have close economic and geographical links to the Union;

Horizon 2020 groups the countries as:

1. Industrialized and emerging economies
2. Enlargement and neighboring countries
3. Developing countries

Deadlines

Each call has different deadlines. The following table presents the Calls with a deadline in the year 2015 only:

Pillar: Industrial Leadership			
Call	Identifier	Deadline	Budget
1. FAST TRACK TO INNOVATION PILOT	H2020-FTIPilot-2015-1	01-12-2015	€100,000,000
2. DEDICATED SME INSTRUMENT - PHASE 2 2015	H2020-SMEINST-2-2015	16-12-2015	€233,701,600
3. DEDICATED SME INSTRUMENT - PHASE 1 2015	H2020-SMEINST-1-2015	16-12-2015	€26,557,000
4. PROTECTION OF EUROPEAN ASSETS IN AND FROM SPACE-2015-LEIT SPACE	H2020-PROTEC-2015	08-04-2015	€6,500,000
5. EARTH OBSERVATION-2015-LEIT SPACE	H2020-EO-2015	08-04-2015	€25,000,000
6. H2020-LEIT-SPACE-COMPETITIVENESS OF THE EUROPEAN SPACE SECTOR-2015	H2020-COMPET-2015	08-04-2015	€39,000,000
7. APPLICATIONS IN SATELLITE NAVIGATION-GALILEO-2015	H2020-Galileo-2015-1	08-04-2015	€25,000,000
8. BIOTECHNOLOGY	H2020-LEIT-BIO-2015-1	26-03-2015	€28,840,000
9. CALL FOR NANOTECHNOLOGIES, ADVANCED MATERIALS AND PRODUCTION	H2020-NMP-ERA-NET-2015	26-03-2015	€12,750,000
10. CALL FOR NANOTECHNOLOGIES, ADVANCED MATERIALS AND PRODUCTION	H2020-NMP-CSA-2015	26-03-2015	€2,650,000
11. CALL FOR NANOTECHNOLOGIES, ADVANCED MATERIALS AND PRODUCTION	H2020-NMP-PILOTS-2015	26-03-2015	€64,430,000
12. CALL FOR NANOTECHNOLOGIES,	H2020-NMP-2015-two-stage	26-03-2015	€148,370,000

ADVANCED MATERIALS AND PRODUCTION			
13. CALL FOR FACTORIES OF THE FUTURE	H2020-FoF-2015	04-02-2015	€143,170,000
14. CALL FOR ENERGY-EFFICIENT BUILDINGS	H2020-EeB-2015	04-02-2015	€62,480,000
15. CALL FOR SPIRE - SUSTAINABLE PROCESS INDUSTRIES	H2020-SPIRE-2015	04-02-2015	€75,170,000
16. EU-BRAZIL RESEARCH AND DEVELOPMENT COOPERATION IN ADVANCED CYBER INFRASTRUCTURE	H2020-EUB-2015	21-04-2015	€7,000,000
17. ICT 2015 - INFORMATION AND COMMUNICATIONS TECHNOLOGIES	H2020-ICT-2015	14-04-2015	€561,000,000
18. ENHANCING SME INNOVATION CAPACITY BY PROVIDING BETTER INNOVATION SUPPORT	H2020-INNOSUP-2015-3	29-04-2015	€1,700,000
19. CLUSTER FACILITATED PROJECTS FOR NEW INDUSTRIAL CHAINS	H2020-INNOSUP-2015-1	30-04-2015	€24,900,000
20. PEER LEARNING OF INNOVATION AGENCIES	H2020-INNOSUP-2014-5	14-10-2015	€1,420,000
21. CAPITALISING THE FULL POTENTIAL OF ON-LINE COLLABORATION	H2020-INNOSUP-2015-2	10-03-2015	€2,350,000

Pillar: Societal Challenges			
22. CLEAN SKY 2 CALL FOR PROPOSALS 01	H2020-CS2-CFP01-2014-01	31-03-2015	€47,960,000
23. IMI2 4TH CALL FOR PROPOSALS	H2020-JTI-IMI2-2015-04-two-stage	11-02-2015	€2,260,000
24. IMI2 3RD CALL FOR PROPOSALS	H2020-JTI-IMI2-2015-03-two-stage	24-03-2015	€112,860,000
25. MOBILITY FOR GROWTH 2014-2015	H2020-MG-2015_TwoStages	23-04-2015	€144,500,000
26. MOBILITY FOR GROWTH 2014-2015	H2020-MG-2015_SingleStage-A	23-04-2015	€21,000,000
27. WATER INNOVATION: BOOSTING ITS VALUE FOR EUROPE	H2020-WATER-2015-two-stage	21-04-2015	€75,000,000
28. WATER INNOVATION: BOOSTING ITS VALUE FOR EUROPE	H2020-WATER-2015-one-stage	21-04-2015	€75,000,000
29. NEW FORMS OF INNOVATION	H2020-INSO-2015-CNECT	28-05-2015	€9,200,000
30. NEW FORMS OF INNOVATION	H2020-INSO-2015	28-05-2015	€13,470,000
31. ENERGY EFFICIENCY - MARKET UPTAKE PDA	H2020-EE-2015-4-PDA	04-06-2015	€5,000,000
32. ENERGY EFFICIENCY - MARKET UPTAKE	H2020-EE-2015-3-MarketUptake	04-06-2015	€54,300,000
33. ENERGY EFFICIENCY RESEARCH & INNOVATION	H2020-EE-2015-2-RIA	04-06-2015	€21,850,000
34. GROWING A LOW CARBON, RESOURCE EFFICIENT ECONOMY WITH A SUSTAINABLE SUPPLY OF RAW MATERIALS	H2020-SC5-2015-two-stage	21-04-2015	€50,000,000
35. GROWING A LOW CARBON, RESOURCE EFFICIENT ECONOMY WITH A SUSTAINABLE SUPPLY OF RAW	H2020-SC5-2015-one-stage	21-04-2015	€116,000,000

MATERIALS			
36. CALL – SMART CITIES AND COMMUNITIES	H2020-SCC-2015	05-05-2015	€107,180,000
37. WASTE: A RESOURCE TO RECYCLE, REUSE AND RECOVER RAW MATERIALS	H2020-WASTE-2015-two-stage	21-04-2015	€54,000,000
38. WASTE: A RESOURCE TO RECYCLE, REUSE AND RECOVER RAW MATERIALS	H2020-WASTE-2015-one-stage	21-04-2015	€4,000,000
39. REFLECTIVE SOCIETIES: CULTURAL HERITAGE AND EUROPEAN IDENTITIES	H2020-REFLECTIVE-6-2015	28-05-2015	€10,000,000
40. THE YOUNG GENERATION IN AN INNOVATIVE, INCLUSIVE AND SUSTAINABLE EUROPE	H2020-YOUNG-SOCIETY-2015	28-05-2015	€9,450,000
41. OVERCOMING THE CRISIS: NEW IDEAS, STRATEGIES AND GOVERNANCE STRUCTURES FOR EUROPE	H2020-EURO-SOCIETY-2015	28-05-2015	€5,000,000
42. REFLECTIVE SOCIETIES: CULTURAL HERITAGE AND EUROPEAN IDENTITIES	H2020-REFLECTIVE-SOCIETY-2015	28-05-2015	€17,500,000
43. CALL FOR COMPETITIVE LOW-CARBON ENERGY	H2020-LCE-2015-3	05-05-2015	€189,470,000
44. CALL FOR COMPETITIVE LOW-CARBON ENERGY	H2020-LCE-2015-2	05-05-2015	€93,000,000
45. EUROPE AS A GLOBAL ACTOR	H2020-INT-INCO-2015	12-05-2015	€10,350,000
46. EUROPE AS A GLOBAL ACTOR	H2020-INT-SOCIETY-2015	28-05-2015	€25,000,000
47. ENERGY EFFICIENCY - PPP EEB AND SPIRE TOPICS	H2020-EE-2015-1-PPP	04-02-2015	€19,560,000
48. PERSONALISING HEALTH AND CARE	H2020-PHC-2015-single-stage_RTD	24-02-2015	€88,000,000
49. PERSONALISING HEALTH AND CARE	H2020-PHC-2015-single-stage	21-04-2015	€104,500,000
50. HEALTH CO-ORDINATION ACTIVITIES	H2020-HCO-2015	24-02-2015	€29,000,000

51. BLUE GROWTH: UNLOCKING THE POTENTIAL OF SEAS AND OCEANS	H2020-BG-2015-2	03-02-2015	€36,000,000
52. SUSTAINABLE FOOD SECURITY	H2020-SFS-2015-2	03-02-2015	€104,000,000
53. INNOVATIVE, SUSTAINABLE AND INCLUSIVE BIOECONOMY	H2020-ISIB-2015-2	03-02-2015	€15,000,000
54. INNOVATIVE, SUSTAINABLE AND INCLUSIVE BIOECONOMY	H2020-ISIB-2015-1	11-06-2015	€27,000,000

Pillar: Excellent Science			
55. MARIE SKŁODOWSKA-CURIE RESEARCH AND INNOVATION STAFF EXCHANGE (RISE)	H2020-MSCA-RISE-2015	28-04-2015	€80,000,000
56. DEVELOPING NEW WORLD-CLASS RESEARCH INFRASTRUCTURES	H2020-INFRADEV-1-2015-2	21-04-2015	€6,000,000
57. SUPPORT TO INNOVATION, HUMAN RESOURCES, POLICY AND INTERNATIONAL COOPERATION	H2020-INFRA supp-2015-2	21-04-2015	€14,000,000
58. CALL FOR PROPOSALS FOR ERC CONSOLIDATOR GRANT	ERC-2015-CoG	12-03-2015	€585,000,000
59. CALLS FOR PROPOSALS FOR ERC PROOF OF CONCEPT GRANT	ERC-2015-PoC	01-10-2015	€20,000,000
60. CALL FOR PROPOSALS FOR ERC STARTING GRANT	ERC-2015-STG	03-02-2015	€430,000,000
61. FET-OPEN - NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES - COORDINATION AND SUPPORT ACTIONS 2015	H2020-FETOPEN-2015-CSA	29-09-2015	€3,000,000
62. FET-OPEN - NOVEL IDEAS FOR RADICALLY NEW TECHNOLOGIES - RESEARCH PROJECTS	H2020-FETOPEN-2014-2015-RIA	29-09-2015	€154,000,000

Pillar: Spreading Excellence and widening participation

63. CALL FOR TWINNING	H2020-TWINN-2015	07-05-2015	€65,270,000
-----------------------	------------------	------------	-------------