

Horisontti 2020: kooste hakuotsikoista työohjelmissa 2018-2020

1. [General introduction](#)

2. [Future and Emerging Technologies](#)

Call - FET Open – Novel ideas for radically new technologies

FETOPEN-01-2018-2019-2020: FET-Open Challenging Current Thinking

FETOPEN-02-2018: FET-Open Coordination and Support Actions

FETOPEN-03-2018-2019-2020: FET Innovation Launchpad

Call - FET Proactive – Boosting emerging technologies

FETPROACT-01-2018: FET Proactive: emerging paradigms and communities

FETPROACT-02-2018: Community building in Neuromorphic Computing Technologies

FETPROACT-03-2018: FET ERA-NET Cofund

Call - FET Proactive – High Performance Computing

FETHPC-01-2018: International Cooperation on HPC

FETHPC-02-2019: Extreme scale computing technologies, methods and algorithms for key applications and support to the HPC ecosystem

Call - FET FLAGSHIPS – Tackling grand interdisciplinary science and technology challenges

FETFLAG-01-2018: Preparatory Actions for new FET Flagships

FETFLAG-02-2018: ERA-NET Cofund for FET Flagships

FETFLAG-03-2018: FET Flagship on Quantum Technologies

Other actions

1. External Expertise
2. Graphene FET Flagship core project
3. HBP FET Flagship core project
4. FET Conference and Events

CALLS and OTHER ACTIONS for 2020

Call - FET-Open – Novel ideas for radically new technologies

Call - FET Proactive – Boosting emerging technologies

Call - FET Proactive – High Performance Computing

Call - FET FLAGSHIPS – Tackling grand interdisciplinary science and technology challenges

Other Actions for 2020

1. External Expertise
2. FET conference and events

3. Marie Skłodowska-Curie actions

Calls

MSCA-ITN-2018: Innovative Training Networks

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MSCA-IF-2018: Individual Fellowships

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MSCA-RISE-2018: Research and Innovation Staff Exchange

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MSCA-COFUND-2018: Co-funding of regional, national and international programmes

MSCA-COFUND-2019: Co-funding of regional, national and international programmes

MSCA-NIGHT-2018: European Researchers' Night

Other actions

1. Events and outreach
2. Studies
3. External expertise
4. Presidency conference(s)
5. Introductory Training
6. MSCA Special Needs Allowance

CALLS for 2020

MSCA-ITN-2020: Innovative Training Networks

MSCA-IF-2020: Individual Fellowships

MSCA-RISE-2020: Research and Innovation Staff Exchange

MSCA-COFUND-2020: Co-funding of regional, national and international programmes

MSCA-NIGHT-2020: European Researchers' Night

Other actions for 2020

1. MSCA Presidency conference
2. External expertise
3. Studies
4. MSCA Alumni Organisation (MCAA)

- 5. Events and Outreach
- 6. MSCA Special Needs Allowance

4. European research infrastructures (including e-Infrastructures)

Call - Development and long-term sustainability of new pan-European research infrastructures

INFRADEV-01-2019-2020: Design Studies

INFRADEV-02-2019-2020: Preparatory Phase of new ESFRI projects

INFRADEV-03-2018-2019: Individual support to ESFRI and other world-class research infrastructures

Call - Implementing the European Open Science Cloud

INFRAEOSC-01-2018: Access to commercial services through the EOSC hub

INFRAEOSC-02-2019: Prototyping new innovative services

INFRAEOSC-04-2018: Connecting ESFRI infrastructures through Cluster projects

INFRAEOSC-05-2018-2019: Support to the EOSC Governance

INFRAEOSC-06-2019-2020: Enhancing the EOSC portal and connecting thematic clouds

Call - Integrating and opening research infrastructures of European interest

INFRAIA-01-2018-2019: Integrating Activities for Advanced Communities

Call - European Data Infrastructure

INFRAEDI-01-2018: Pan-European High Performance Computing infrastructure and services (PRACE)

INFRAEDI-02-2018: HPC PPP - Centres of Excellence on HPC

INFRAEDI-03-2018: Support to the governance of High Performance Computing Infrastructures

Call - Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation

INFRAINNOV-01-2019: Stimulate the innovation potential of SMEs

INFRAINNOV-02-2019: Network of research infrastructure Industrial Liaison and Contact Officers

Call - Support to policy and international cooperation

INFRASUPP-01-2018-2019: Policy and international cooperation measures for research infrastructures

Other actions

- 1. External expertise
- 2. Fostering transnational cooperation between National Contact Points (NCP) in the area of

Research Infrastructures: follow-up project
3. GÉANT Partnership projects

CALLS for 2020

Call - Development and long-term sustainability of new pan-European research infrastructures (continued in 2020)

Call - Implementing the European Open Science Cloud (continued in 2020)

Call - Integrating and opening research infrastructures of European interest (continued in 2020)

Call - European Data Infrastructure (continued in 2020)

Call - Demonstrating the role of Research Infrastructures in the translation of Open Science into Open Innovation (continued in 2020)

Call - Support to policy and international cooperation (continued in 2020)

Other actions for 2020

1. External expertise for 2020

[5. Leadership in enabling and industrial technologies - Introduction](#)

[5.i. Information and Communication Technologies](#)

Call - Information and Communication Technologies

Technologies for Digitising European Industry

ICT-01-2019: Computing technologies and engineering methods for cyber-physical systems of systems

ICT-02-2018: Flexible and Wearable Electronics

ICT-03-2018-2019: Photonics Manufacturing Pilot Lines for Photonic Components and Devices

ICT-04-2018: Photonics based manufacturing, access to photonics, datacom photonics and connected lighting

ICT-05-2019: Application driven Photonics components

ICT-06-2019: Unconventional Nanoelectronics

ICT-07-2018: Electronic Smart Systems (ESS)

ICT-08-2019: Security and resilience for collaborative manufacturing environments

ICT-09-2019-2020: Robotics in Application Areas

ICT-10-2019-2020: Robotics Core Technology

European Data Infrastructure: HPC, Big Data and Cloud technologies

ICT-11-2018-2019: HPC and Big Data enabled Large-scale Test-beds and Applications

ICT-12-2018-2020: Big Data technologies and extreme-scale analytics

ICT-13-2018-2019: Supporting the emergence of data markets and the data economy

ICT-14-2019: Co-designing Extreme Scale Demonstrators (EsD)

ICT-15-2019-2020: Cloud Computing

ICT-16-2018: Software Technologies

5G

ICT-17-2018: 5G End to End Facility

ICT-18-2018: 5G for cooperative, connected and automated mobility (CCAM)

ICT-19-2019: Advanced 5G validation trials across multiple vertical industries

ICT-20-2019-2020: 5G Long Term Evolution

ICT-21-2018: EU-US Collaboration for advanced wireless platforms

ICT-22-2018: EU-China 5G Collaboration

ICT-23-2019: EU-Taiwan 5G collaboration

Next Generation Internet (NGI)

ICT-24-2018-2019: Next Generation Internet - An Open Internet Initiative

ICT-25-2018-2020: Interactive Technologies

ICT-26-2018-2020: Artificial Intelligence

ICT-27-2018-2020: Internet of Things

ICT-28-2018: Future Hyper-connected Sociality

ICT-29-2018: A multilingual Next Generation Internet

ICT-30-2019-2020: An empowering, inclusive Next Generation Internet

ICT-31-2018-2019: EU-US collaboration on NGI

Cross-cutting activities

ICT-32-2018: STARTS – The Arts stimulating innovation

ICT-33-2019: Startup Europe for Growth and Innovation Radar

ICT-34-2018-2019: Pre-Commercial Procurement open

ICT-35-2018: Fintech: Support to experimentation frameworks and regulatory compliance

Call - Digitising and transforming European industry and services: digital innovation hubs and platforms

DT-ICT-01-2019: Smart Anything Everywhere

DT-ICT-02-2018: Robotics - Digital Innovation Hubs (DIH)

DT-ICT-03-2020: I4MS (phase 4) - uptake of digital game changers and digital manufacturing platforms

DT-ICT-04-2020: Photonics Innovation Hubs

DT-ICT-05-2020: Big Data Innovation Hubs

DT-ICT-06-2018: Coordination and Support Activities for Digital Innovation Hub network

Platforms and Pilots

DT-ICT-07-2018-2019: Digital Manufacturing Platforms for Connected Smart Factories

DT-ICT-08-2019: Agricultural digital integration platforms

DT-ICT-09-2020: Digital service platforms for rural economies

DT-ICT-10-2018-19: Interoperable and smart homes and grids

DT-ICT-11-2019: Big data solutions for energy

DT-ICT-12-2020: The smart hospital of the future

DT-ICT-13-2019: Digital Platforms/Pilots Horizontal Activities

Call - Cybersecurity

SU-ICT-01-2018: Dynamic countering of cyber-attacks

SU-ICT-02-2020: Building blocks for resilience in evolving ICT systems

SU-ICT-03-2020: Advanced cybersecurity and digital privacy technologies

SU-ICT-04-2019: Quantum Key Distribution testbed

Call - EU-Japan Joint Call

EJ-01-2018: Advanced technologies (Security/Cloud/IoT/BigData) for a hyper-connected society in the context of Smart City

EJ-02-2018: 5G and beyond

Call - EU-Korea Joint Call

EK-01-2018: Cloud, IoT and AI technologies

EK-02-2018: 5G

Other actions

1. External expertise
2. Digital Assembly Events 2018 and 2019
3. ICT conferences, studies and other activities
4. EUROSTAT
5. Framework Partnership Agreement in European low-power microprocessor technologies (Phase 1)
6. Framework Partnership Agreement in European low-power microprocessor technologies (Phase 2)
7. Fostering transnational cooperation between National Contact Points (NCP) in the area of ICT: follow-up project
8. "Digital Opportunity" pilot scheme
9. Inducement prize: Tactile Displays for the Visually Impaired

Calls and Other actions for 2020

ICT 2020 Topics

Call- Digitising and transforming European industry and services - continued in 2020

5.ii. Nanotechnologies, Advanced Materials, Biotechnology and Advanced Manufacturing and Processing

Call - FOUNDATIONS FOR TOMORROW'S INDUSTRY

1.1 OPEN INNOVATION TEST BEDS

DT-NMBP-01-2018: Open Innovation Test Beds for Lightweight, nano-enabled multifunctional composite materials and components (IA)

DT-NMBP-02-2018: Open Innovation Test Beds for Safety Testing of Medical Technologies for Health (IA)

DT-NMBP-03-2019: Open Innovation Test Beds for nano-enabled surfaces and membranes (IA)

DT-NMBP-04-2020: Open Innovation Test Beds for bio-based nano-materials and solutions (IA)

DT-NMBP-05-2020: Open Innovation Test Beds for functional materials for building envelopes (IA)

DT-NMBP-06-2020: Open Innovation Test Beds for nano-pharmaceuticals production (IA)

1.2 MATERIALS CHARACTERISATION and COMPUTATIONAL MODELLING

DT-NMBP-07-2018: Open Innovation Test Beds for Characterisation (IA)

DT-NMBP-08-2019: Real-time nano-characterisation technologies (RIA)

DT-NMBP-09-2018: Accelerating the uptake of materials modelling software (IA)

DT-NMBP-10-2019: Adopting materials modelling to challenges in manufacturing processes (RIA)

DT-NMBP-11-2020: Open Innovation Test Beds for Materials Modelling (IA)

DT-NMBP-12-2019: Sustainable Nano-Fabrication (CSA)

1.3 GOVERNANCE, SCIENCE-BASED RISK ASSESSMENT AND REGULATORY ASPECTS

NMBP-13-2018: Risk Governance of nanotechnology (RIA)

NMBP-14-2018: Nanoinformatics: from materials models to predictive toxicology and ecotoxicology (RIA)

NMBP-15-2019: Safe by design, from science to regulation: metrics and main sectors (RIA)

NMBP-16-2020: Safe by design, from science to regulation: behaviour of multi-component nanomaterials (RIA)

NMBP-17-2020: Regulatory science for medical technology products (RIA)

Call - TRANSFORMING EUROPEAN INDUSTRY

2.1. FACTORIES OF THE FUTURE (FOF)

- DT-FOF-01-2018: Skills needed for new Manufacturing jobs (CSA)
- DT-FOF-02-2018: Effective Industrial Human-Robot Collaboration (RIA)
- DT-FOF-03-2018: Innovative manufacturing of opto-electrical parts (RIA)
- DT-FOF-04-2018: Pilot lines for metal Additive Manufacturing (IA 50%)
- DT-FOF-05-2019: Open Innovation for collaborative production engineering (IA)
- DT-FOF-06-2019: Refurbishment and re-manufacturing of large industrial equipment (IA)
- DT-FOF-07-2020: Reliable and accurate assembly of micro parts (RIA)
- DT-FOF-08-2019: Pilot lines for modular factories (IA 50%)
- DT-FOF-09-2020: Holistic energy-efficient factory management (IA)
- DT-FOF-10-2020: Pilot lines for large-part high-precision manufacturing (IA 50%)
- DT-FOF-11-2020: Quality control in smart manufacturing (IA)
- DT-FOF-12-2019: Handling systems for flexible materials (RIA)
- DT-NMBP-18-2019: Materials, manufacturing processes and devices for organic and large area electronics (IA)
- DT-NMBP-19-2019: Advanced materials for additive manufacturing (IA)
- DT-NMBP-20-2018: A digital 'plug and produce' online equipment platform for manufacturing (IA)

2.2 BIOTECHNOLOGY

- BIOTEC-01-2018: Standardisation in Synthetic Biology (CSA)
- BIOTEC-02-2019: Boosting the efficiency of photosynthesis (RIA)
- BIOTEC-03-2018: Synthetic biology to expand diversity of nature's chemical production (RIA)
- CE-BIOTEC-04-2018: New biotechnologies for environmental remediation (RIA)
- CE-BIOTEC-05-2019: Microorganism communities for plastics bio-degradation (RIA)
- BIOTEC-06-2020: Reprogrammed microorganisms for biological sensors (IA)
- BIOTEC-07-2020: Multi-omics for the optimisation of genotype-phenotype associations (RIA)

2.3. MEDICAL TECHNOLOGY INNOVATIONS

- NMBP-21-2020: Custom-made biological scaffolds for specific tissue regeneration and repair (RIA)
- NMBP-22-2018: Osteoarticular tissues regeneration (RIA)
- DT-NMBP-23-2020: Next generation organ-on-chip (RIA)

Call - INDUSTRIAL SUSTAINABILITY

3.1. SUSTAINABLE PROCESS INDUSTRY (SPIRE)

CE-SPIRE-01-2020: Industrial symbiosis (IA)

CE-SPIRE-02-2018: Processing of material feedstock using non-conventional energy sources (IA)

CE-SPIRE-03-2018: Energy and resource flexibility in highly energy intensive industries (IA 50%)

CE-SPIRE-04-2019: Efficient integrated downstream processes (IA)

CE-SPIRE-05-2019: Adaptation to variable feedstock through retrofitting (IA 50%)

DT-SPIRE-06-2019: Digital technologies for improved performance in cognitive production plants (IA)

CE-SPIRE-07-2020: Recovery of industrial water, thermal energy and substances contained therein (IA)

CE-SPIRE-08-2020: Improved Industrial Processing using novel high-temperature resistant materials (RIA)

CE-SPIRE-09-2020: Making the most of mineral waste, by-products and recycled material as feed for high volume production (IA)

CE-SPIRE-10-2018: Efficient recycling processes for plastic containing materials

3.2. CATALYSING THE CIRCULAR ECONOMY

CE-NMBP-24-2018: Catalytic transformation of hydrocarbons (RIA)

CE-NMBP-25-2019: Photocatalytic synthesis (RIA)

CE-NMBP-26-2018: Smart plastic materials with intrinsic recycling properties by design (RIA)

3.3. CLEAN ENERGY THROUGH INNOVATIVE MATERIALS

LC-NMBP-27-2019: Strengthening EU materials technologies for non-automotive battery storage (RIA)

LC-NMBP-28-2020: Advanced materials for innovative multilayers for durable photovoltaics (IA)

LC-NMBP-29-2019: Materials for non-battery based energy storage (RIA)

LC-NMBP-30-2018: Materials for future highly performant electrified vehicle batteries (RIA)

LC-NMBP-31-2020: Materials for off shore energy (IA)

LC-NMBP-32-2019: Smart materials, systems and structures for energy harvesting (RIA)

3.4. CULTURAL HERITAGE

NMBP-33-2018: Innovative and affordable solutions for the preventive conservation of cultural heritage (IA)

3.5. ENERGY-EFFICIENT BUILDINGS (EEB)

LC-EEB-01-2019: Integration of energy smart materials in non-residential buildings (IA)

LC-EEB-02-2018: Building information modelling adapted to efficient renovation (RIA)

LC-EEB-03-2019: New developments in plus energy houses (IA)

LC-EEB-04-2020: Industrialisation of building envelope for the renovation market (IA)

LC-EEB-05-2019-20: Integrated storage systems for residential buildings (IA)

LC-EEB-06-2018-20: ICT enabled, sustainable and affordable residential building construction, design to end of life (IA 50%)

Other actions

1. External Expertise
2. Review of the Research and Innovation Approach to key enabling and emerging technologies (Continuation)
3. Presidency event (conference) in Romania: EuroNanoForum 2019
4. Presidency event (conference) in Finland: Sustainable Smart Manufacturing

Calls and other actions for 2020

Call - FOUNDATIONS FOR TOMORROW'S INDUSTRY (continued in 2020)

Call - TRANSFORMING EUROPEAN INDUSTRY (continued in 2020)

Call - INDUSTRIAL SUSTAINABILITY (continued in 2020)

5.iii. Leadership in Enabling and Industrial Technologies - Space

Call - Space 2018-2020

Earth observation

DT-SPACE-01-EO-2018-2020: Copernicus market uptake

LC-SPACE-02-EO-2018: Copernicus evolution – Mission exploitation concepts

LC-SPACE-03-EO-2018: Copernicus evolution - Preparing for the next generation of Copernicus Marine Service ocean models

LC-SPACE-04-EO-2019-2020: Copernicus evolution – Research activities in support of cross-cutting applications between Copernicus services

LC-SPACE-05-EO-2019: Copernicus evolution – Research activities in support to a European operational monitoring system for fossil CO2 emissions

DT-SPACE-06-EO-2019: International Cooperation Copernicus – Designing EO downstream applications with international partners

Space business, entrepreneurship, outreach and education

DT-SPACE-07-BIZ-2018: Space hubs for Copernicus

DT-SPACE-08-BIZ-2018: Space outreach and education

DT-SPACE-09-BIZ-2019: Space hubs (support to start-ups)

Space technologies, science and exploration

SPACE-10-TEC-2018-2020: Technologies for European non-dependence and competitiveness

SPACE-11-TEC-2018: Generic space technologies

SPACE-12-TEC-2018: SRC – Space robotics technologies

SPACE-13-TEC-2019: SRC – In-Space electrical propulsion and station keeping

LC-SPACE-14-TEC-2018-2019: Earth observation technologies

SPACE-15-TEC-2018: Satellite communication technologies

SPACE-16-TEC-2018: Access to space

SPACE-17-TEC-2019: Access to space

SPACE-18-TEC-2019-2020: In-orbit validation/demonstration – Mission design, integration and implementation

SPACE-20-SCI-2018: Scientific instrumentation and technologies enabling space science and exploration

Secure and safe space environment

SU-SPACE-22-SEC-2019: Space Weather

Call - EGNSS market uptake 2019-2020

LC-SPACE-EGNSS-1-2019-2020: EGNSS applications fostering green, safe and smart mobility

DT-SPACE-EGNSS-2-2019-2020: EGNSS applications fostering digitisation

SU-SPACE-EGNSS-3-2019-2020: EGNSS applications fostering societal resilience and protecting the environment

SPACE-EGNSS-4-2019: Awareness Raising and capacity building

European Innovation Council (EIC) prize: "Low cost Space Launch"

Other actions (2018-2020)

1. ESA engineering support
2. InnovFin Space Equity Pilot (ISEP)
3. Programmatic Support Actions for the Strategic Research Clusters
4. In-orbit demonstration/validation – launch services
5. Space surveillance and tracking (SST)
6. Improving the Performances of the SST at European Level
7. Galileo Evolution, Mission and Service related R&D activities
8. EGNOS, Mission and Service related R&D activities
9. GNSS evolution, infrastructure-related R&D activities
10. Cooperation among NCPs

11. Studies & Communication
12. Horizon 2020 project monitoring
13. Horizon 2020 tender evaluation, project monitoring and audits (EGNSS)

CALLS and OTHER ACTIONS for 2020

Call - Space 2020

Call - EGNSS market uptake 2020

Other actions (2020)

6. Access to Risk Finance

Other actions

1. Debt Finance for R&I
 - 1.1 Universal Financing
 - 1.2 InnovFin Corporate Research Equity Pilot
2. Thematic Finance for R&I
 - 2.1 InnovFin Energy Demo Projects
 - 2.2 InnovFin Infectious Diseases
 - 2.3 InnovFin Holding Fund for Thematic Investment Platforms
3. SMEs & Small Midcaps Service
 - 3.1 InnovFin SME Guarantee
 - 3.1.1 InnovFin Uncapped Guarantee for Subordinated Debt to R&I-driven SMEs and Small Midcaps
 - 3.1.2 InnovFin Crowdlending Pilot
 - 3.2 InnovFin Equity
 - 3.2.1 InnovFin Space Equity Pilot
 - 3.3 Blending Instrument Pilot
4. EIC Horizon Prizes
5. External Expertise
6. InnovFin Advisory
7. Second Interim Evaluation of Horizon 2020 Financial Instruments and Facilities
8. Ex post evaluation of the RSFF and the RSI
9. Innovative Enterprise Week 2018 – Bulgaria
10. Innovative Enterprise Week 2018 – Austria
11. Innovative Enterprise Week 2019
12. Innovative Enterprise Week 2020
13. High-level conference on R&I foundations and other venture philanthropists

7. Innovation in small and medium-sized enterprises

Call - For a better innovation support to SMEs

INNOSUP-01-2018-2020: Cluster facilitated projects for new industrial value chains

INNOSUP-02-2019-2020: European SME innovation Associate – pilot

INNOSUP-03-2018: Blockchain and distributed ledger technologies for SMEs

INNOSUP-04-2019: Workplace innovation uptake by SMEs

INNOSUP-05-2018-2020: Peer learning of innovation agencies

INNOSUP-06-2018: Supporting experimentation in innovation agencies

INNOSUP-07-2019: European Open Innovation network in advanced technologies

INNOSUP-09-2018: Design and development of a tool to support and improve the decision making process of investors for financing high-growth potential innovative SMES

Other Actions

1. Enterprise Europe Network's services provision in 2019-2021
2. Supporting assessments of 'innovation management capacity' by the Enterprise Europe Network
3. Core training to the European SME Innovation Associate - pilot (INNOSUP-02)
4. Study on the effectiveness of public innovation support for SMEs in Europe
5. SMEs for Social Innovation - European Social Innovation Competition
6. Hosting, maintaining, and developing the learning environment for intercultural business communication - continuation
7. Support to design and running of randomized control trials under INNOSUP-06-2018
8. IP Helpdesk
9. IP pre-diagnosis action for Horizon 2020 participants
10. Assessment of SME Participation to Horizon 2020 (2014-2017)
11. In-depth evaluation of the (EIC) SME instrument
12. In-depth assessment of the (EIC) Fast Track to Innovation (FTI)
13. Assessment of the Impact of Completed Eurostars-1 and 2 Projects
14. Final evaluation of Eurostars 2 Joint Programme
15. External expertise
16. Eureka Annual Membership Fee
17. SMEs for Social Innovation - European Social Innovation Competition - Prizes

CALLS for 2020

Call - For a better innovation support to SMEs (call continued in 2020)

INNOSUP-01-2018-2020-continued: Cluster facilitated projects for new industrial value chains

INNOSUP-02-2019-2020-continued: European SME innovation Associate – pilot

INNOSUP-05-2018-2020-continued: Peer learning of innovation agencies

INNOSUP-08-2020: Pan-European advanced manufacturing assistance and training for SMEs

Other actions for 2020

1. Enterprise Europe Network's services provision in 2019-2021 (continued)
2. Eureka Annual Membership Fee
3. SMEs for Social Innovation - European Social Innovation Competition -Prizes

8. Health, demographic change and wellbeing

Call - Better Health and care, economic growth and sustainable health systems

1.1 Personalised medicine

SC1-BHC-01-2019: Understanding causative mechanisms in co- and multimorbidities

SC1-BHC-02-2019: Systems approaches for the discovery of combinatorial therapies for complex disorders

SC1-BHC-03-2018: Exploiting research outcomes and application potential of the human microbiome for personalised prediction, prevention and treatment of disease

SC1-BHC-04-2018: Rare Disease European Joint Programme Cofund

SC1-BHC-05-2018: International flagship collaboration with Canada for human data storage, integration and sharing to enable personalised medicine approaches

SC1-HCO-01-2018-2019-2020: Actions in support of the International Consortium for Personalised Medicine

SC1-HCO-02-2018: Data integration and data-driven in-silico models for enabling personalised medicine - a European standardization framework

SC1-HCO-04-2018: ERA-NET to support the Joint Programming in Neurodegenerative Diseases strategic plan (JPND)

1.2 Innovative health and care industry

SC1-BHC-07-2019: Regenerative medicine: from new insights to new applications

SC1-BHC-09-2018: Innovation platforms for advanced therapies of the future

SC1-BHC-10-2019: Innovation Procurement: Next generation sequencing (NGS) for routine diagnosis

SC1-HCO-05-2018: Strengthening regulatory sciences and supporting regulatory scientific advice

1.3 Infectious diseases and improving global health

SC1-BHC-13-2019: Mining big data for early detection of infectious disease threats driven by climate change and other factors

SC1-BHC-14-2019: Stratified host-directed approaches to improve prevention, treatment and/or cure of infectious diseases

SC1-BHC-15-2018: New anti-infective agents for prevention and/or treatment of neglected infectious diseases (NID)

SC1-BHC-16-2018: Global Alliance for Chronic Diseases (GACD) - Scaling-up of evidence-based health interventions at population level for the prevention and management of hypertension and/or diabetes

SC1-BHC-18-2018: Translational collaborative cancer research between Europe and the Community of Latin American and Caribbean States (CELAC)

SC1-BHC-19-2019: Implementation research for maternal and child health

SC1-BHC-21-2018: Research on HIV, tuberculosis (TB) and/or hepatitis C (HCV) in patients with mono-, co-infections and/or comorbidities in the context of fostering collaboration with the Russian Federation

SC1-HCO-06-2018: Establishment of an International Network of Social Sciences Research Centres to help address governance and other challenges in the preparedness for and the response to infectious threats

SC1-HCO-08-2018: Creation of a European wide sustainable clinical research network for infectious diseases

SC1-HCO-09-2018: Building international efforts on population and patient cohorts

SC1-HCO-10-2018: Coordinating European brain research and developing global initiatives

SC1-HCO-11-2018: Strategic collaboration in health research and innovation between EU and China

1.4. Innovative health and care systems - Integration of care

SC1-BHC-22-2019: Mental health in the workplace

SC1-BHC-23-2018: Novel patient-centred approaches for survivorship, palliation and/or end-of-life care

SC1-BHC-25-2019: Demonstration pilots for implementation of personalised medicine in healthcare

SC1-BHC-26-2018: HTA research to support evidence-based healthcare

SC1-HCO-12-2018: Innovation in healthcare - a CSA towards using pre-commercial procurement and public procurement of innovative solutions in healthcare systems

1.5 Decoding the role of the environment, including climate change, for health and well-being

SC1-BHC-27-2018: New testing and screening methods to identify endocrine disrupting chemicals

SC1-BHC-28-2019: The Human Exposome Project: a toolbox for assessing and addressing the impact of environment on health

SC1-HCO-13-2018: Setting the priorities for a European environment, climate and health

research agenda

Call - Digital transformation in Health and Care

SC1-DTH-01-2019: Big data and Artificial Intelligence for monitoring health status and quality of life after the cancer treatment

SC1-DTH-03-2018: Adaptive smart working and living environments supporting active and healthy ageing

SC1-DTH-05-2019: Large scale implementation of digital innovation for health and care in an ageing society

SC1-DTH-07-2018: Exploiting the full potential of in-silico medicine research for personalised diagnostics and therapies in cloud-based environments

SC1-DTH-08-2018: Prototyping a European interoperable Electronic Health Record (EHR) exchange

SC1-DTH-09-2019: Scaling up the univocal Identification of Medicinal Products

SC1-DTH-10-2019-2020: Digital health and care services

SC1-DTH-11-2019: Large Scale pilots of personalised & outcome based integrated care

SC1-HCC-01-2018: Supporting investment in smart living environments for ageing well through certification

SC1-HCC-02-2019: Support for the large scale uptake of open service platforms in the Active and Healthy Ageing domain

SC1-HCC-03-2018: Support to further development of international cooperation in digital transformation of health and care

SC1-HCC-04-2018: Digital health and care services – support for strategy and (early) adoption

SC1-HCC-05-2018: Support to a Digital Health and Care Innovation initiative in the context of Digital Single Market strategy

Call - Trusted digital solutions and Cybersecurity in Health and Care

Focus Area on Digitising and transforming European industry and services

T-TDS-01-2019: Smart and healthy living at home

Focus Area on Boosting the effectiveness of the Security Union

SU-TDS-02-2018: Toolkit for assessing and reducing cyber risks in hospitals and care centres to protect privacy/data/infrastructures

SU-TDS-03-2018: Raising awareness and developing training schemes on cybersecurity in hospitals

Other actions

1. Subscription fee: Human Frontier Science Programme Organisation
2. Studies, activities of the Scientific Panel for Health, conferences, events and outreach activities
3. External expertise
4. Grant to the Global Alliance for Chronic Diseases
5. Commission expert group for the impact assessment of the planned Commission communication on infectious diseases
6. Subscription fee: World RePORT international health research database
7. Mobilisation of research funds in case of Public Health Emergencies

CALLS for 2020

Call - Better Health and care, economic growth and sustainable health systems (continued in 2020)

Call - Digital Transformation in Health and Care

Call - Trusted digital solutions and Cybersecurity in Health and Care

Other Actions for 2020

1. Subscription fee: Human Frontier Science Programme Organisation
2. Mobilisation of research funds in case of Public Health Emergencies

[9. Food security, sustainable agriculture and forestry, marine, maritime and inland water research and the bioeconomy](#)

Call - Sustainable Food Security

From functional ecosystems to healthy food

SFS-01-2018-2019-2020: Biodiversity in action: across farmland and the value chain

LC-SFS-03-2018: Microbiome applications for sustainable food systems

SFS-04-2019-2020: Integrated health approaches and alternatives to pesticide use

SFS-05-2018-2019-2020: New and emerging risks to plant health

SFS-06-2018-2020: Stepping up integrated pest management

SFS-07-2018: Making European beekeeping healthy and sustainable

SFS-08-2018-2019: Improving animal welfare

SFS-11-2018-2019: Anti-microbials and animal production

SFS-12-2019: A vaccine against African swine fever

DT-SFS-14-2018: Personalized Nutrition

LC-SFS-15-2018: Future proofing our plants

SFS-16-2018: Towards healthier and sustainable food

LC-SFS-17-2019: Alternative proteins for food and feed

Environment and climate-smart food production and consumption

LC-SFS-19-2018-2019: Climate-smart and resilient farming
LC-SFS-20-2019: European Joint Programme on agricultural soil management
LC-SFS-22-2020 - Forest soils Research and Innovation Action
SFS-23-2019: Integrated water management in small agricultural catchments
CE-SFS-24-2019: Innovative and citizen-driven food system approaches in cities
CE-SFS-25-2018: Integrated system innovation in valorising urban biowaste

Building capacities

DT-SFS-26-2019: Food Cloud demonstrators
SFS-27-2018: Monitoring food R&I investments and impacts
SFS-28-2018-2019-2020: Genetic resources and pre-breeding communities
SFS-29-2018: Innovations in plant variety testing
SFS-30-2018-2019-2020: Agri-Aqua Labs
SFS-31-2019: ERANETs in agri-food

Targeted international cooperation

SFS-32-2018: Supporting microbiome coordination and the International Bioeconomy Forum
EU-Africa Partnership on Food and Nutrition Security and Sustainable Agriculture (FNSSA)
SFS-33-2018: Support to the implementation of the EU-Africa Research and Innovation
Partnership on Food and Nutrition Security & Sustainable Agriculture (FNSSA)
LC-SFS-34-2019: Food Systems Africa
SFS-35-2019-2020: Sustainable Intensification in Africa
CE-SFS-36-2020 - Diversifying farmers' income through small bio-based concepts
EU-China FAB Flagship initiative
SFS-37-2019: Integrated approaches to food safety controls across the food chain
SFS-38-2018: Highly efficient management of soil quality and land resources
CE-SFS-39-2019: High-quality organic fertilisers from biogas digestate

Call - Blue Growth

BG-01-2018: Towards a Baltic and North Sea research and innovation programme
BG-02-2018: Blue Bioeconomy Public-Public Partnership
LC-BG-03-2018: Sustainable harvesting of marine biological resources
DT-BG-04-2018-2019: Sustainable European aquaculture 4.0: nutrition and breeding
BG-05-2019: Multi-use of the marine space, offshore and near-shore: pilot demonstrators
CE-BG-06-2019: Sustainable solutions for bio-based plastics on land and sea
BG-07-2019-2020: The Future of Seas and Oceans Flagship Initiative
BG-08-2018-2019: All Atlantic Ocean Research Alliance Flagship

LC-BG-09-2019: Coordination of marine and maritime research and innovation in the Black Sea

Call - Rural Renaissance

From farm to society: understanding dynamics and modernising policies

RUR-01-2018-2019: Building modern rural policies on long-term visions and societal engagement

RUR-02-2018: Socio-economic impacts of digitisation of agriculture and rural areas

RUR-03-2018: Contracts for effective and lasting delivery of agri-environmental public goods

RUR-04-2018-2019: Analytical tools and models to support policies related to agriculture and food

Organising sustainable food and non-food value chains under changing conditions

CE-RUR-08-2018-2019-2020: Closing nutrient cycles

RUR-09-2018: Realising the potential of regional and local bio-based economies

CE-RUR-10-2019: Circular bio-based business models for rural communities

LC-RUR-11-2019-2020: Sustainable wood value chains

Taking advantage of the digital revolution

DT-RUR-12-2018: ICT Innovation for agriculture – Digital Innovation Hubs for Agriculture

RUR-13-2018: Enabling the farm advisor community to prepare farmers for the digital age

RUR-14-2018: Digital solutions and e-tools to modernise the CAP

Boosting innovation and enhancing the human and social capital in rural areas

RUR-15-2018-2019-2020: Thematic networks compiling knowledge ready for practice

RUR-16-2019: Fuelling the potential of advisors for innovation

Other Actions

1. Circular Bioeconomy Thematic Investment Platform (risk-sharing financial instrument)
2. Support to Research and Innovation Policy in the area of bio-based products and services
3. 5th Foresight exercise of the Standing Committee for Agricultural Research (SCAR)
4. External expertise

Calls and Other Actions for 2020

Call - Sustainable Food Security

Call - Blue Growth

Call - Rural Renaissance

10. Secure, clean and efficient energy

Call - BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: SECURE, CLEAN AND EFFICIENT ENERGY

Energy efficiency

Upgrading buildings' energy performance and smartness

LC-SC3-EE-1-2018-2019-2020: Decarbonisation of the EU building stock: innovative approaches and affordable solutions changing the market for buildings renovation

LC-SC3-EE-2-2018-2019: Integrated home renovation services

LC-SC3-EE-3-2019-2020: Stimulating demand for sustainable energy skills in the construction sector

LC-SC3-EE-4-2019-2020: Upgrading smartness of existing buildings through innovations for legacy equipment

LC-SC3-EE-5-2018-2019-2020: Next-generation of Energy Performance Assessment and Certification

Energy efficient industry and services

LC-SC3-EE-6-2018-2019-2020: Business case for industrial waste heat/cold recovery

LC-SC3-EE-8-2018-2019: Capacity building programmes to support implementation of energy audits

Energy efficiency is an investment

LC-SC3-EE-9-2018-2019: Innovative financing for energy efficiency investments

LC-SC3-EE-10-2018-2019-2020: Mainstreaming energy efficiency finance

LC-SC3-EE-11-2018-2019-2020: Aggregation - Project Development Assistance

Energy efficiency is an energy source

LC-SC3-EE-13-2018-2019-2020: Enabling next-generation of smart energy services valorising energy efficiency and flexibility at demand-side as energy resource

LC-SC3-EE-14-2018-2019-2020: Socio-economic research conceptualising and modelling energy efficiency and energy demand

Support for policy-driven innovations

LC-SC3-EE-15-2018: New energy label driving and boosting innovation in products energy efficiency

LC-SC3-EE-16-2018-2019-2020: Supporting public authorities to implement the Energy Union

LC-SC3-EE-17-2019: European City facility - European Cities as key innovation hubs to unlock finance for energy efficiency

Global leadership in renewables

Next Renewable energy solutions

LC-SC3-RES-1-2019-2020: Developing the next generation of renewable energy technologies

LC-SC3-RES-2-2018: Disruptive innovation in clean energy technologies

Renewable energy solutions for implementation at consumer scale

LC-SC3-RES-4-2018: Renewable energy system integrated at the building scale

LC-SC3-RES-5-2018: Increased performance of technologies for local heating and cooling solutions

LC-SC3-RES-6-2018: Demonstrate significant cost reduction for Building Integrated PV (BIPV) solutions

LC-SC3-RES-7-2019: Solar Energy in Industrial Processes

LC-SC3-RES-8-2019: Combining Renewable Technologies for a Renewable District Heating and/or Cooling System

Renewable energy solutions for energy system level implementation

LC-SC3-RES-11-2018: Developing solutions to reduce the cost and increase performance of renewable technologies

LC-SC3-RES-12-2018: Demonstrate highly performant renewable technologies for combined heat and power (CHP) generation and their integration in the EU's energy system

LC-SC3-RES-13-2018: Demonstrate solutions that significantly reduce the cost of renewable power generation

LC-SC3-RES-14-2019: Optimising manufacturing and system operation

LC-SC3-RES-15-2019: Increase the competitiveness of the EU PV manufacturing industry

LC-SC3-RES-16-2019: Development of solutions based on renewable sources that provide flexibility to the energy system

LC-SC3-RES-17-2019: Demonstration of solutions based on renewable sources that provide flexibility to the energy system

Renewable Fuels for transport

LC-SC3-RES-21-2018: Development of next generation biofuels and alternative renewable fuel technologies for road transport

LC-SC3-RES-22-2018: Demonstration of cost effective advanced biofuel pathways in retrofitted existing industrial installations

LC-SC3-RES-23-2019: Development of next generation biofuel and alternative renewable fuel technologies for aviation and shipping

LC-SC3-RES-24-2019: Boosting pre-commercial production of advanced aviation biofuels

LC-SC3-RES-28-2018-2019-2020: Market Uptake support

Smart and clean energy for consumers

LC-SC3-EC-1-2018-2019-2020: The role of consumers in changing the market through informed decision and collective actions

LC-SC3-EC-2-2018-2019-2020: Mitigating household energy poverty

LC-SC3-EC-3-2020 - Consumer engagement and demand response

Smart citizen-centred energy system

LC-SC3-ES-1-2019: Flexibility and retail market options for the distribution grid

LC-SC3-ES-2-2019: Solutions for increased regional cross-border cooperation in the transmission grid

LC-SC3-ES-3-2018-2020: Integrated local energy systems (Energy islands)

LC-SC3-ES-4-2018-2020: Decarbonising energy systems of geographical Islands

LC-SC3-ES-5-2018-2020: TSO – DSO – Consumer: Large-scale demonstrations of innovative grid services through demand response, storage and small-scale (RES) generation

LC-SC3-ES-6-2019: Research on advanced tools and technological development

LC-SC3-ES-7-2018: Pan-European Forum for R&I on Smart Grids, Flexibility and Local Energy Networks

LC-SC3-ES-8-2019: European Islands Facility - Unlock financing for energy transitions and supporting islands to develop investment concepts

Smart Cities and Communities

LC-SC3-SCC-1-2018-2019-2020: Smart Cities and Communities

Enabling near-zero CO2 emissions from fossil fuel power plants and carbon intensive industries

LC-SC3-NZE-1-2018: Advanced CO2 capture technologies

CE-SC3-NZE-2-2018: Conversion of captured CO2

LC-SC3-NZE-3-2018: Strategic planning for CCUS development

LC-SC3-NZE-4-2019: Integrated solutions for flexible operation of fossil fuel power plants through power-to-X-to-power and/or energy storage

LC-SC3-NZE-5-2019-2020: Low carbon industrial production using CCUS

LC-SC3-NZE-6-2020: Geological Storage Pilots

Joint Actions

LC-SC3-JA-1-2018: Joint programming actions to foster innovative energy solutions

LC-SC3-JA-2-2018: Support to the realisation of the Implementation Plans of the SET Plan

LC-SC3-JA-3-2019: European Pre-Commercial Procurement Programme for Wave Energy Research & Development

LC-SC3-JA-4-2018: Support action in preparation of a Joint Programming activity

LC-SC3-JA-5-2019: Joint Programming with EU and African partners for a R&I actions in the area of renewable energy

Cross-cutting issues

LC-SC3-CC-1-2018-2019-2020: Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition

LC-SC3-CC-2-2018: Modelling in support to the transition to a Low-Carbon Energy System in Europe

LC-SC3-CC-3-2019: Support for the opening of low-carbon energy research databases in Europe

LC-SC3-CC-4-2018: Support to sectorial fora

LC-SC3-CC-5-2018: Research, innovation and educational capacities for energy transition

LC-SC3-CC-6-2018: Transition in coal intensive regions

OTHER ACTIONS

Horizon Prizes

1. Horizon prizes launched under the Work Programme 2016-2017 of the Horizon 2020 Societal Challenge "Clean Secure and efficient energy" (SC3)

Grants to identified beneficiaries

1. Fostering transnational cooperation between National Contact Points (NCP) in the area of Energy: follow-up project

2. 5th Concerted Action on the Energy Performance of Buildings Directive support to Member States and participating countries for the implementation of the EPBD

3. Support to joint surveillance actions for market surveillance by the Member States with the aim to strengthen coordination between the relevant authorities, share best practices, exploit synergies in product testing and improve compliance with legislation

4. Support to the coordination of national research and innovation programmes in the areas of activities of the European Energy Research Alliance (EERA)

5. Support to the initiative on sustainable energy in the defence and security sector

6. Support to the Austrian Presidency Conference on the European Strategic Technology Plan (SET-Plan) 2018

7. Support to disruptive innovation in clean energy technologies

8. Contribution to the IEA & Energy Transition Support

Public procurements

1. Provision of technical assistance, IT tools, modelling and/or studies to collect and analyse relevant data and to properly assess complex technical, environmental, economic, legal and social aspects of energy efficiency
2. Study on the role of smart technologies in residential buildings
3. Multiple Framework contract with reopening of competition for qualified legal, technical and economic expertise in the field of Energy Efficiency to support the Commission in the design, preparation and proper implementation of EU initiatives and legislation in the area of Energy Efficiency
4. Technical support for RES heating and cooling
5. Provision of technical assistance and/or studies to support the implementation of the heating and cooling strategy
6. Product registration database at EU level
7. Support for the development and implementation of the EU Energy Star Programme including maintenance of the website, development of new technical specifications, impact analysis and market penetration survey
8. Technical assistance for communication and evaluation purposes related to energy efficiency
9. Support to Smart finance for smart buildings initiative
10. Tender on "Energy Efficiency Finance Market Place"
11. Assessment of Finance projects covering PDA, De-risking and Innovative Finance
12. Evaluation of projects in Industry area
13. EASME external communication activities (publications, audiovisual, events)
14. Support to Research and Innovation Policy in the areas of Renewable Energy, Carbon Capture and Storage and More Efficient Coal Combustion
15. Dissemination and information activities
16. Information services for energy research and innovation policy development
17. Information, communication and logistic support for EU #1 in RES
18. Support services for exploitation of research results (SSERR)
19. Assessment of the impacts of EU-funded RD&D projects in the area of fuel cells and hydrogen
20. Studies on the EU energy system in support of policy
21. Assessment of advanced biofuels, including deployment potential of new/ appearing feedstocks, feedstock availability, resource competition, and sustainability issues in the context of the Renewable Energy Directive Article 3(4)
22. Assessment of carbon fuels produced from fossil waste streams, including deployment potential, resource competition and decarbonisation potential
23. Technical requirements for track and trace databases
24. Support for the implementation of the ILUC- Directive
25. Technical assistance for the implementation of the EU bioenergy sustainability criteria
26. Supply side flexibility of combined renewable energy systems (non-variable and

- variable). Assessment of development, barriers and regulatory aspects of combined RES supply systems of gaseous renewable fuels and variable RES
27. Technical support for RES policy development and implementation
 28. Support for policy and market development for alternative and renewable transport fuels and products
 29. Analysis of actual land availability in the EU; trends in changes (abandoned land, low fertility land, saline land etc.) and options for energy crop utilization
 30. Support for the planning and deployment of efficient, low carbon District Heating and Cooling in cities
 31. Research & Innovation communication activities
 32. Support Services for the Covenant of Mayors for Climate and Energy
 33. Innovation, fair transition and sustainable growth in coal and carbon intensive regions in the context of the clean energy transition (analysis of socio-economic impacts and pathways for growth and innovation)
 34. Support to the European Innovation Partnership on Smart Cities and Communities and its Market Place
 35. Innovative assessment of macro-economic impacts of EU energy transition
 36. Removing barriers to Green Growth by assessment scale and impact of subsidies in all energy sectors of the EU
 37. Extension of METIS gas/electricity markets and systems model
 38. 2020 Renewable energy progress report
 39. Support to the realisation of Implementation Plans of the SET Plan
 40. Information, dissemination and logistic support for EU in Mission Innovation

Provision of technical/scientific services by the Joint Research Centre

1. Administrative arrangement with the JRC, to provide Technical assistance on GHG emission saving criteria for biofuels and biomass fuels

Delegation Agreements

1. ELENA (European Local Energy Assistance)

Specific Grant Agreements

1. Technical support to stakeholders on standardisation work for energy related products
2. Support to European Standardisation Organisations on standardisation work for energy related products
3. Standardisation request to the CEN for algae and algae-based products in support of the implementation of the RED II Proposal
4. Support to European Standardisation Organisations for biomethane injection in the grid in support of the implementation of the RED II Proposal

5. Support to European Standardisation Organisations for Ethanol 20/25 blends in petrol in support of the implementation of the RED II
6. Support to European Standardisation Organisations for petrol/ethanol blends in diesel in support of the implementation of the RED II Proposal

Financial Instruments

1. Support to first-of-a-kind renewable energy projects

Subscriptions

1. Annual subscription to the International Partnership for Energy Efficiency Cooperation (IPEEC)
2. Contribution to Technology Collaboration Programmes (TCPs) of the International Energy Agency (IEA)
3. Contribution to the Global CCS Institute
4. Contribution to the International Renewable Energy Agency (IRENA)
5. Contribution to the Secretariat of the Clean Energy Ministerial (CEM)

Expert contracts

1. External expertise

CALLS for 2020

Indicative topics for 2020

Other Actions for 2020

1. Monitoring and assessment of the performance indicators of renewable energy, investment and RES market trends in Europe
2. Study on the impact of projects funded under the Horizon 2020 Energy Challenge
3. Continuation of the Building Stock Observatory and production of relevant bottom-up statistical data on buildings
4. Support facility for public authorities
5. Energy system modelling
6. Support to R&I Strategy and feedback to policy in the field of electricity networks and local energy systems
7. Smart Cities and Communities information system
8. Research oriented data sets and open access database
9. Operation, maintenance, improvement and promotion of the BUILD UP interactive web portal
10. Concerted Action supporting the transposition and implementation of the recast Renewables Directive

11. Concerted Action on the Energy Efficiency Directive support to Member States and participating countries for the implementation of the EED
12. Administrative arrangement with the JRC, to implement the relevant provisions of Energy Efficiency related Directives or Regulations, including Directive 2012/27/EU and the EPBD
13. Technical and scientific assistance to the Covenant of Mayor by JRC

11. Smart, green and integrated transport

Call - 2018-2020 Mobility for Growth

1. BUILDING A LOW-CARBON, CLIMATE RESILIENT FUTURE: LOW-CARBON AND SUSTAINABLE TRANSPORT

LC-MG-1-1-2018: InCo flagship on reduction of transport impact on air quality

LC-MG-1-2-2018: Sustainable multi-modal inter-urban transport, regional mobility and spatial planning.

LC-MG-1-3-2018: Harnessing and understanding the impacts of changes in urban mobility on policy making by city-led innovation for sustainable urban mobility

LC-MG-1-4-2018: Hardening vehicle environmental protection systems against tampering

LC-MG-1-5-2019: Advancements in aerodynamics and innovative propulsion systems for quieter and greener aircrafts

LC-MG-1-6-2019: Aviation operations impact on climate change (InCo flagship)

LC-MG-1-7-2019: Future propulsion and integration: towards a hybrid/electric aircraft (InCo flagship)

LC-MG-1-8-2019: Retrofit Solutions and Next Generation Propulsion for Waterborne Transport

LC-MG-1-9-2019: Upgrading transport infrastructure in order to monitor noise and emissions

LC-MG-1-10-2019: Logistics solutions that deal with requirements of the 'on demand economy' and for shared-connected and low-emission logistics operations

2. SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

MG-2-1-2018: Human Factors in Transport Safety

MG-2-2-2018: Marine Accident Response

MG-2-3-2018: Airworthiness of mass-market drones

MG-2-4-2018: Coordinating national efforts in modernizing transport infrastructure and provide innovative mobility services

MG-2-5-2018: Innovative technologies for improving aviation safety and certification in icing conditions (InCo flagship)

MG-2-6-2019: Moving freight by Water: Sustainable Infrastructure and Innovative Vessels

MG-2-7-2019: Safety in an evolving road mobility environment

MG-2-8-2019: Innovative applications of drones for ensuring safety in transport

MG-2-9-2019: InCo Flagship on Integrated multimodal, low-emission freight transport systems and logistics

3. GLOBAL LEADERSHIP AND COMPETITIVENESS

MG-3-1-2018: Multidisciplinary and collaborative aircraft design tools and processes

MG-3-2-2018: The Autonomous Ship

MG-3-3-2018: "Driver" behaviour and acceptance of connected, cooperative and automated transport

4. ACCOUNTING FOR THE PEOPLE

MG-4-1-2018: New regulatory frameworks to enable effective deployment of emerging technologies and business/operating models for all transport modes

MG-4-2-2018: Building Open Science platforms in transport research

MG-4-3-2018: Demographic change and participation of women in transport

MG-4-4-2018-2019: Support for dissemination events in the field of Transport Research

MG-4-5-2019: An inclusive digitally interconnected transport system meeting citizens' needs

MG-4-6-2019: Supporting Joint Actions on sustainable urban accessibility and connectivity

BLUE GROWTH

MG-BG-01-2018: Unmanned and autonomous survey activities at sea

MG-BG-02-2019: Ship emission control scenarios, marine environmental impact and mitigation

Call - 2018-2020 Digitising and Transforming European Industry and Services: Automated Road Transport

DT-ART-01-2018: Testing, validation and certification procedures for highly automated driving functions under various traffic scenarios based on pilot test data

DT-ART-02-2018: Support for networking activities and impact assessment for road automation

DT-ART-03-2019: Human centred design for the new driver role in highly automated vehicles

DT-ART-04-2019: Developing and testing shared, connected and cooperative automated vehicle fleets in urban areas for the mobility of all

DT-ART-05-2020 - Efficient and safe connected and automated heavy-duty vehicles in real logistics operations

DT-ART-06-2020 - Large-scale, cross-border demonstration of highly automated driving functions for passenger cars

Call - Building a low-carbon, climate resilient future: Green Vehicles

LC-GV-01-2018: Integrated, brand-independent architectures, components and systems for next generation electrified vehicles optimised for the infrastructure

LC-GV-02-2018: Virtual product development and production of all types of electrified vehicles and components

LC-GV-03-2019: User centric charging infrastructure

LC-GV-04-2019: Low-emissions propulsion for long-distance trucks and coaches

LC-GV-05-2019: InCo flagship on "Urban mobility and sustainable electrification in large urban areas in developing and emerging economies"

LC-GV-06-2020 - Next generation and realisation of battery packs for BEV and HEV 95

LC-GV-07-2020 - Advanced light materials and their production processes for automotive applications

LC-GV-08-2020 - Reducing the environmental impact of hybrid light duty vehicles

LC-GV-09-2020 - Next generation electrified vehicles for urban use

Other actions

1. Horizon prize for the cleanest engine of the future
2. External expertise
3. External expertise to advise on EU research and innovation policy
4. Support to the ITF Decarbonising Transport project
5. Ex-post analysis of Clean Sky 2, SESAR and Shift2Rail Joint Undertakings
6. Support for the implementation of TRIMODE, a 'Europe wide transport model, technology watch, data and scenarios'
7. New mobility patterns in European cities
8. Support to the development, implementation, monitoring and evaluation of transport research and innovation policy activities
9. Support to the organisation of the annual EU-US Transport research symposia
10. Exploring the possible employment implications of connected and automated driving
11. Dissemination and exploitation of results

[12. Climate action, environment, resource efficiency and raw materials](#)

Call - Building a low-carbon, climate resilient future: climate action in support of the Paris Agreement

Decarbonisation

LC-CLA-01-2018: Supporting the development of climate policies to deliver on the Paris Agreement, through Integrated Assessment Models (IAMs)

LC-CLA-02-2019: Negative emissions and land-use based mitigation assessment
Climate adaptation, impacts and services

LC-CLA-03-2018: Climate change impacts in Europe

LC-CLA-04-2018: Resilience and sustainable reconstruction of historic areas to cope with climate change and hazard events

LC-CLA-05-2019: Human dynamics of climate change

Inter-relations between climate change, biodiversity and ecosystem services

LC-CLA-06-2019: Inter-relations between climate change, biodiversity and ecosystem services

The Cryosphere

LC-CLA-07-2019: The changing cryosphere: uncertainties, risks and opportunities

Knowledge gaps

LC-CLA-08-2018: Addressing knowledge gaps in climate science, in support of IPCC reports

Call - Greening the economy in line with the Sustainable Development Goals (SDGs)

Connecting economic and environmental gains - the circular economy

CE-SC5-01-2018: Methods to remove hazardous substances and contaminants from secondary raw materials

CE-SC5-02-2018: Independent testing programme on premature obsolescence

CE-SC5-03-2018: Demonstrating systemic urban development for circular and regenerative cities

CE-SC5-04-2019: Building a water-smart economy and society

CE-SC5-05-2018: Coordinated approaches to funding and promotion of research and innovation for the circular economy

Raw materials

CE-SC5-06-2018: New technologies for the enhanced recovery of by-products

CE-SC5-07-2018-2019-2020: Raw materials innovation for the circular economy: sustainable processing, reuse, recycling and recovery schemes

CE-SC5-08-2018-2019-2020: Raw materials policy support actions for the circular economy

SC5-09-2018-2019: New solutions for the sustainable production of raw materials

SC5-10-2019-2020: Raw materials innovation actions: exploration and Earth observation in support of sustainable mining

Water for our environment, economy and society

SC5-11-2018: Digital solutions for water: linking the physical and digital world for water solutions

SC5-12-2018: EU-India water co-operation

Innovating cities for sustainability and resilience

SC5-13-2018-2019: Strengthening international cooperation on sustainable urbanisation: nature-based solutions for restoration and rehabilitation of urban ecosystems

SC5-14-2019: Visionary and integrated solutions to improve well-being and health in cities

Protecting and leveraging the value of our natural and cultural assets: Earth observation

SC5-15-2018: Strengthening the benefits for Europe of the Global Earth Observation System of Systems (GEOSS) - establishing 'EuroGEOSS'

SC5-16-2019: Development of commercial activities and services through the use of GEOSS and Copernicus data

Protecting and leveraging the value of our natural and cultural assets: Nature-based solutions, disaster risk reduction and natural capital accounting

SC5-17-2018: Towards operational forecasting of earthquakes and early warning capacity for more resilient societies

SC5-18-2018: Valuing nature: mainstreaming natural capital in policies and in business decision-making

Protecting and leveraging the value of our natural and cultural assets: Heritage alive

SC5-19-2018: International network to promote cultural heritage innovation and diplomacy

SC5-20-2019: Transforming historic urban areas and/or cultural landscapes into hubs of entrepreneurship and social and cultural integration

SC5-21-2019-2020: ERA-NET Cofund action(s) for climate action, environment, resource efficiency and raw materials

Other actions

1. External expertise
2. High Level Expert Group for SRIA on innovating cities

3. GEO subscription
4. Support actions for raw materials policy (public procurement)
5. Other support actions for raw materials and circular economy policy (public procurement)
6. Educational innovation around nature-based solutions
7. 'Heritage Alive' outreach actions related to the European Year of Cultural Heritage 2018
8. Support actions for raw materials policy (JRC)
9. IPBES secretariat
10. Arctic Science Ministerial – Germany, October 2018
11. Multi-stakeholder design platforms and public-private-people partnerships for sustainable cities
12. Fostering transnational cooperation between National Contact Points (NCP) in the area of Societal Challenge 5: follow-up project
13. Presidency event (conference): 'Europe's Transformation: Where People Matter' – Austria, November 2018
14. Presidency event (conference): 'Sustainable development at the Black Sea' – Romania, first half of 2019
15. Presidency event (conference): 'The sustainable transition to a low carbon, climate-resilient circular economy: Creating the knowledge base' – Helsinki, September 2019
16. IPCC secretariat
17. InnovFin Water Innovation Pilot Facility

CALLS for 2020

Call - Greening the economy in line with the Sustainable Development Goals (SDGs)

Other actions for 2020

1. External expertise
2. GEO subscription
3. Support actions for raw materials policy
4. InnovFin Water Innovation Pilot Facility

[13. Europe in a changing world – Inclusive, innovative and reflective societies](#)

Call - MIGRATION

MIGRATION-01-2019: Understanding migration mobility patterns: elaborating mid and long-term migration scenarios

MIGRATION-02-2018: Towards forward-looking migration governance: addressing the challenges, assessing capacities and designing future strategies

MIGRATION-03-2019: Social and economic effects of migration in Europe and integration

policies

MIGRATION-05-2018-2020: Mapping and overcoming integration challenges for migrant children

DT-MIGRATION-06-2018-2019: Addressing the challenge of migrant integration through ICT-enabled solutions

MIGRATION-07-2019: International protection of refugees in a comparative perspective

MIGRATION-08-2018: Addressing the challenge of forced displacement

Call - SOCIOECONOMIC AND CULTURAL TRANSFORMATIONS IN THE CONTEXT OF THE FOURTH INDUSTRIAL REVOLUTION

TRANSFORMATIONS-01-2018: Research for inclusive growth: addressing the socioeconomic effects of technological transformations

DT-TRANSFORMATIONS-02-2018-2019-2020: Transformative impact of disruptive technologies in public services

TRANSFORMATIONS-03-2018-2019: Innovative solutions for inclusive and sustainable urban environments

TRANSFORMATIONS-04-2019-2020: Innovative approaches to urban and regional development through cultural tourism

TRANSFORMATIONS-05-2018: Cities as a platform for citizen-driven innovation

TRANSFORMATIONS-06-2018: Inclusive and sustainable growth through cultural and creative industries and the arts

DT-TRANSFORMATIONS-07-2019: The impact of technological transformations on children and youth

TRANSFORMATIONS-08-2019: The societal value of culture and the impact of cultural policies in Europe

SU-TRANSFORMATIONS-09-2018: Social platform on endangered cultural heritage and on illicit trafficking of cultural goods

DT-TRANSFORMATIONS-11-2019: Collaborative approaches to cultural heritage for social cohesion

DT-TRANSFORMATIONS-12-2018-2020: Curation of digital assets and advanced digitization

TRANSFORMATIONS-13-2019: Using big data approaches in research and innovation policy making

TRANSFORMATIONS-14-2018: Supply and demand-oriented economic policies to boost robust growth in Europe – Addressing the social and economic challenges in Europe

Call - GOVERNANCE FOR THE FUTURE

GOVERNANCE-01-2019: Trust in governance

GOVERNANCE-02-2018-2019: Past, present and future of differentiation in European governance

GOVERNANCE-03-2018: Addressing populism and boosting civic and democratic

engagement

GOVERNANCE-04-2019: Enhancing social rights and EU citizenship

DT-GOVERNANCE-05-2018-2019-2020: New forms of delivering public goods and inclusive public services

GOVERNANCE-06-2018: Trends and forward-looking scenarios in global governance

GOVERNANCE-08-2018: Partnering for viability assessments of innovative solutions for markets outside Europe

SU-GOVERNANCE-10-2019: Drivers and contexts of violent extremism in the broader MENA region and the Balkans

SU-GOVERNANCE-11-2018: Extreme ideologies and polarization

DT-GOVERNANCE-12-2019-2020: Pilot on using the European cloud infrastructure for public administrations

DT-GOVERNANCE-13-2019: Digitisation, Digital Single Market and European culture: new challenges for creativity, intellectual property rights and copyright

GOVERNANCE-14-2018: ERA-Net Co-fund - Renegotiating democratic governance in times of disruptions

GOVERNANCE-15-2018: Taking lessons from the practices of interdisciplinarity in Europe

Other actions

I - Support to R&I policy reform and evidence based policy making

1. Horizon 2020 Policy Support Facility
2. Implementation and analysis of the joint Commission-OECD international survey on STI policies
3. Analysing the R&I productivity-inequality nexus
4. Implementation of the OECD-European Commission administrative arrangement
5. Development of the European Innovation Scoreboard
6. Industrial Research and Innovation Monitoring and Analysis
7. Development of composite indicators on R&I performance and econometric analysis
8. Expert support for big data for R&I performance monitoring
9. Support to R&I performance and policy analysis
10. Continued work on QUEST III
11. Expert group to advise on further development of the macro-economic modelling agenda
12. Implementation of a new macro-economic modelling concept

II - Support to Open Science and to EU policy in the field of research and innovation

13. Support to Open Science, Open Access and Open Data
14. Support to Open Science, Open Access and Open Data
15. Support to EU policy in the field of research and innovation

16. Support to EU policy in the field of research and innovation
17. Support for the future orientations of EU research and innovation policy

III - Innovation prizes, innovation policy, and support to the European Innovation Council and to international cooperation in research and innovation

18. The European Capital of Innovation Award (iCapital)
19. Horizon Prize for Social Innovation in Europe
20. Expert Group to advise in designing a European Innovation Council
21. Pan European supplementary pension funds 2014- 2018: Retirement Savings Vehicle for European Research Institutions
22. Data gathering and analysis of the policy developments and reforms
23. Service Facility in support of the strategic development of international cooperation in research and innovation
24. Study on the current status of policies on national and EU level in support of the knowledge triangle

IV - Horizontal actions

25. e-Government related studies, conferences and other events
26. External Expertise
27. Presidency events – Austria
28. COST
29. Fostering transnational cooperation between National Contact Points (NCP) in the area of SC6: follow-up project

Calls and Other Actions for 2020

- Call – MIGRATION
- Call - H2020-SC6-TRANSFORMATIONS-2018-2019-2020
- Call - GOVERNANCE FOR THE FUTURE

14. [Secure societies - Protecting freedom and security of Europe and its citizens](#)

Boosting the effectiveness of the Security Union - Focus Area

- Call - Protecting the infrastructure of Europe and the people in the European smart cities**

SU-INFRA01-2018-2019-2020: Prevention, detection, response and mitigation of combined physical and cyber threats to critical infrastructure in Europe (IA)

SU-INFRA02-2019: Security for smart and safe cities, including for public spaces (IA)

Call - Security

Disaster-Resilient Societies

SU-DRS01-2018-2019-2020: Human factors, and social, societal, and organisational aspects for disaster-resilient societies (RIA)

SU-DRS02-2018-2019-2020: Technologies for first responders (RIA)

SU-DRS03-2018-2019-2020: Pre-normative research and demonstration for disaster-resilient societies (IA)

SU-DRS04-2019-2020: Chemical, biological, radiological and nuclear (CBRN) cluster (RIA)

SU-DRS05-2019: Demonstration of novel concepts for the management of pandemic crises (IA)

Fight against Crime and Terrorism

SU-FCT01-2018-2019-2020: Human factors, and social, societal, and organisational aspects to solve issues in fighting against crime and terrorism (RIA)

SU-FCT02-2018-2019-2020: Technologies to enhance the fight against crime and terrorism (RIA)

SU-FCT03-2018-2019-2020: Information and data stream management to fight against (cyber)crime and terrorism (IA)

SU-FCT04-2020: Explosives: detection, intelligence, forensics

Border and External Security

SU-BES01-2018-2019-2020: Human factors, and social, societal, and organisational aspects of border and external security (RIA)

SU-BES02-2018-2019-2020: Technologies to enhance border and external security (RIA)

SU-BES03-2018-2019-2020: Demonstration of applied solutions to enhance border and external security (IA)

General matters

SU-GM01-2018-2019-2020: Pan-European networks of practitioners and other actors in the field of security (CSA)

SU-GM02-2018-2020: Strategic pre-commercial procurements of innovative, advanced systems to support security (CSA)

SU-GM03-2018-2019-2020: Pre-commercial procurements of innovative solutions to enhance security (PCP)

Call - Digital Security

Cybersecurity, Digital Privacy and data protection

SU-DS01-2018: Cybersecurity preparedness - cyber range, simulation and economics (IA)

SU-DS02-2020: Management of cyber-attacks and other risks

SU-DS03-2019-2020: Digital Security and privacy for citizens and Small and Medium Enterprises and Micro Enterprises (IA)

SU-DS04-2018-2020: Cybersecurity in the Electrical Power and Energy System (EPES): an armour against cyber and privacy attacks and data breaches (IA)

SU-DS05-2018-2019: Digital security, privacy, data protection and accountability in critical sectors (IA, RIA)

Other actions

1. Reviews of projects
2. Workshops, conferences, experts, communication activities, studies
3. Space Surveillance and Tracking
4. Pre-standardisation mechanisms for security

CALLS and OTHER ACTIONS for 2020

Call - Protecting the infrastructure of Europe and the people in the European smart cities

Call – Security

Call - Digital Security

15. Spreading Excellence and Widening Participation

Call - WIDESPREAD

WIDESPREAD-01-2018-2019: Teaming Phase 2

WIDESPREAD-02-2018: Support to JPI Urban Europe

WIDESPREAD-03-2018: Twinning

WIDESPREAD-04-2019: ERA Chairs

Call - Widening Fellowships

WF-01-2018: Widening Fellowships

WF-02-2019: Widening Fellowships

Other actions

1. External Expertise
2. COST
3. WIRE IX Conference
4. WIRE X Conference

CALLS for 2020

Call – WIDESPREAD

Call - Widening Fellowships

Other actions for 2020

1. External Expertise
2. COST
3. WIRE XI Conference

16. Science with and for society

Call - Science with and for Society

Strategic orientation 1. Accelerating and catalysing processes of institutional change

SwafS-01-2018-2019: Open schooling and collaboration on science education

SwafS-02-2018: Innovative methods for teaching ethics and research integrity

SwafS-03-2018: Developing research integrity standard operating procedures

SwafS-04-2018: Encouraging the re-use of research data generated by publically funded research projects

SwafS-05-2018-2019: Grounding RRI practices in research and innovation funding and performing organisations

SwafS-06-2018: Science4Refugees

SwafS-07-2019: EURAXESS TOP V

SwafS-08-2019: Research innovation needs & skills training in PhD programmes

Strategic orientation 2. Stepping up support to Gender Equality in Research & Innovation policy

SwafS-09-2018-2019: Supporting research organisations to implement gender equality plans

SwafS-10-2018: Analysing gender gaps and biases in the allocation of grants

SwafS-11-2019: Scenarios for an award/certification system for gender equality in research organisations and universities in Europe

SwafS-12-2019: The gender perspective of science, technology and innovation (STI) in dialogue with third countries

SwafS-13-2018: Gender Equality Academy and dissemination of gender knowledge across Europe

Strategic orientation 3. Building the territorial dimension of SwafS partnerships

SwafS-14-2018-2019: Supporting the development of territorial Responsible Research and Innovation

SwafS-22-2018: Mobilising Research Excellence in EU Outermost Regions (OR)

Strategic orientation 4. Exploring and supporting citizen science

SwafS-15-2018-2019: Exploring and supporting citizen science

SwafS-16-2019: Ethics of Innovation: the challenge of new interaction modes

Strategic orientation 5. Building the knowledge base for SwafS

SwafS-17-2019: Consolidating and expanding the knowledge base on citizen science

SwafS-18-2018: Taking stock of the application of the precautionary principle in R&I

SwafS-19-2018-2019: Taking stock and re-examining the role of science communication

SwafS-20-2018-2019: Building the SwafS knowledge base

SwafS-21-2018: Advancing the Monitoring of the Evolution and Benefits of Responsible Research and Innovation

Other actions

1. Expert group to update and expand "Gendered Innovations/ Innovation through Gender"
2. Monitoring gender equality in Research and Innovation - Development, implementation and dissemination of indicators
3. European Union Contest for Young Scientists (EUCYS) 2018
4. European Union Contest for Young Scientists (EUCYS) 2019
5. The Euroscience Open Forum (ESOF) 2020
6. Tender accreditation HR Strategy
7. HR Strategy mutual learning seminars
8. EURAXESS Portal + IS Coordinator
9. Researchers' Conference 2019
10. EURAXESS Biennial Conference
11. Promotion of the EURAXESS initiative
12. Industrial Talents dimension of the Innovative Doctoral Training Principles
13. International EURAXESS Conference (WORLDWIDE)
14. EURAXESS WORLDWIDE implementation
15. RESAVER- Support to RESAVER Pension Fund
16. Fostering transnational cooperation between National Contact Points (NCP) in the area

of Science with and for Society: follow-up project

17. Debate Science! European Youth Parliaments

18. Stocktaking of 20 years of Gender equality in Research and Innovation

19. EU Prize for Women Innovators

20. Expertise

21. External expertise for ad hoc tasks related to the implementation of Horizon 2020 Ethics Appraisal scheme

Call and other actions 2020

Call - Science with and for Society

1. ESOF 2022

2. EUCYS 2020

3. HR Strategy Mutual Learning Seminars

4. Researchers' Conference 2021

5. EURAXESS Biennial Conference 2021

6. Promotion of the EURAXESS initiative

7. EU Prize for Women Innovators

8. Expertise

9. External expertise for ad hoc tasks related to the implementation of Horizon 2020 Ethics Appraisal scheme

[17. European Innovation Council](#)

Calls

SME Instrument

Fast Track to Innovation (FTI)

FET-Open

EIC Horizon Prizes

1. EIC Horizon Prize for 'Innovative Batteries for eVehicles'

2. EIC Horizon Prize for 'Fuel from the Sun: Artificial Photosynthesis'

3. EIC Horizon Prize for 'Early Warning for Epidemics'

4. EIC Horizon Prize for 'Blockchain for Social Good'

5. EIC Horizon Prize for 'Low-Cost Space Launch'

6. EIC Horizon Prize for 'Affordable High-Tech for Humanitarian Aid'

HORISONTTI 2020

EU:n tutkimus- ja innovaatio-ohjelmat