UKRO Horizon 2020 Condensed

Future and Emerging Technologies (FET)

What is FET?

The Future and Emerging Technologies (FET) scheme supports collaborative research to extend Europe's capacity for advanced and paradigm-changing innovation. It aims to foster scientific collaboration across disciplines on radically new, high-risk ideas and to accelerate development of the most promising emerging areas of science and technology.

FET is one of the four elements in the Excellent Science Pillar under Horizon 2020, and is comprised of three strands: FET Open (including the Innovation Launchpad), FET Proactive (originally including the implementation of part of the High Performance Computing (HPC) strategy) and FET Flagships.

What will be funded?

**FET Open** supports the early stages of science and technology research and innovation around new ideas towards radically new future technologies. Most of the funding is allocated to fund collaborative research in a bottom-up manner. Successful projects are likely to be characterised by a radical vision, breakthrough technological targets and propose ambitious, interdisciplinary research. (These are known as the ‘FET gatekeepers’).

A comparatively small proportion of the budget is foreseen to support Coordination and Support Actions around FET-related activities, and there is a separate topic aimed at supporting further innovation-related work arising from FET-funded projects and to support next steps towards turning them into a genuine social or economic innovation (‘Innovation Launchpad’).

**FET Proactive** features a selection of ambitious emerging technology topics; these include living technologies, socially interactive technologies, technologies related to time, artificial organs, micro-energy and storage technologies, neuromorphic computing, future electrical storage and topological matter.

Community building and innovation ecosystem development are key elements in FET proactive, including:
• Future technologies for societal change: being human in a technological world; new science for a globalised world
• Biotech for better life: Intra- and inter-cell bio-technologies; bio-electronic medicines and therapies; cognitive neuro-technologies
• Disruptive information technologies: new computing paradigms and their technologies; quantum engineering; hybrid opto-electro-mechanical devices at the nano-scale
• New technologies for energy and functional materials: ecosystem engineering; complex bottom-up construction.

A separate call within FET Proactive had been designed to contribute, together with topics in the Research Infrastructure part of the Horizon 2020 Work Programme, to the implementation of the European HPC strategy. This has now crystallised into a separate initiative, the EuroHPC Joint Undertaking that was formed in January 2018. The public private partnership (PPP) with the European Technology Platform in HPC (ETP4HPC), which started on 1 January 2014, also contributes to this initiative. Funding for ERA-NET Cofund actions also continues.

FET Flagships are science-driven, large-scale, multidisciplinary research initiatives, aiming to achieve transformational impacts with substantial benefits for European competitiveness and for society. Two Flagships were formed under Framework Programme 7 (FP7), namely the Graphene Flagship and the Human Brain Project. FP7 provided them with funding for the ramp-up phase and have been fully supported in Horizon 2020. The Commission announced a flagship-type investment in Quantum Technologies in April 2016, which officially started work in 2018. The 2019 Work Programme featured a call for CAS preparatory actions for potentially new Flagships.

Call information and timings

FET Open call for Research and Innovation Actions (RIAs) has deadlines on 18 September 2019 and 13 May 2020. The FET Open call for CSAs has deadlines on 8 October 2019 and 14 October 2020.

FET Flagships and ERA-NET Cofund actions aside, the FET part of the Work Programme is mostly implemented through a combination of Research and Innovation Actions and Coordination and Support Actions.

2019 Update to the FET Work Programme

Following the adoption of the final updates for the 2018-2020 Work Programme on 24 July 2018, the 2018-2020 Future and Emerging technologies (FET) work programme has been available on the Funding & tender opportunities portal. Topics, dates and budget relating to 2019 have been updated, but parts relating to 2020 have been provided on an indicative basis. Specific details are to be determined in 2019, with the last iteration of the 2018-2020 FET work programme part to be formally adopted in the summer of 2019.

For 2019, changes in the work programme part for FET were minor and concentrated mainly on an advancement of the budget allocation between 2019 and 2020. The topics ‘FETHPC-02-2019: Extreme scale computing technologies, methods and algorithms for key applications and support to the HPC ecosystem’ and ‘FETHPC-03-2019: International Cooperation on HPC’ have been removed from the Work programme in view of the transfer of High Performance Computing activities in 2019 and 2020 to the EuroHPC Joint Undertaking.
More information:

- European Commission Research and Innovation Participant Portal for:
- Strategic Research Agenda of ETP4HPC: [www.etp4hpc.eu/strategy/strategic-research-agenda/](www.etp4hpc.eu/strategy/strategic-research-agenda/)
- Graphene Flagship: [graphene-flagship.eu](graphene-flagship.eu)
- Human Brain Project: [humanbrainproject.eu](humanbrainproject.eu)
- Quantum Flagship: [https://qt.eu/](https://qt.eu/)
- Sign up to the UKRO Portal to stay up to date on Horizon 2020 general developments, calls, events and results: [ukro.ac.uk](ukro.ac.uk)
- For specific questions, contact your UKRO European Advisor