

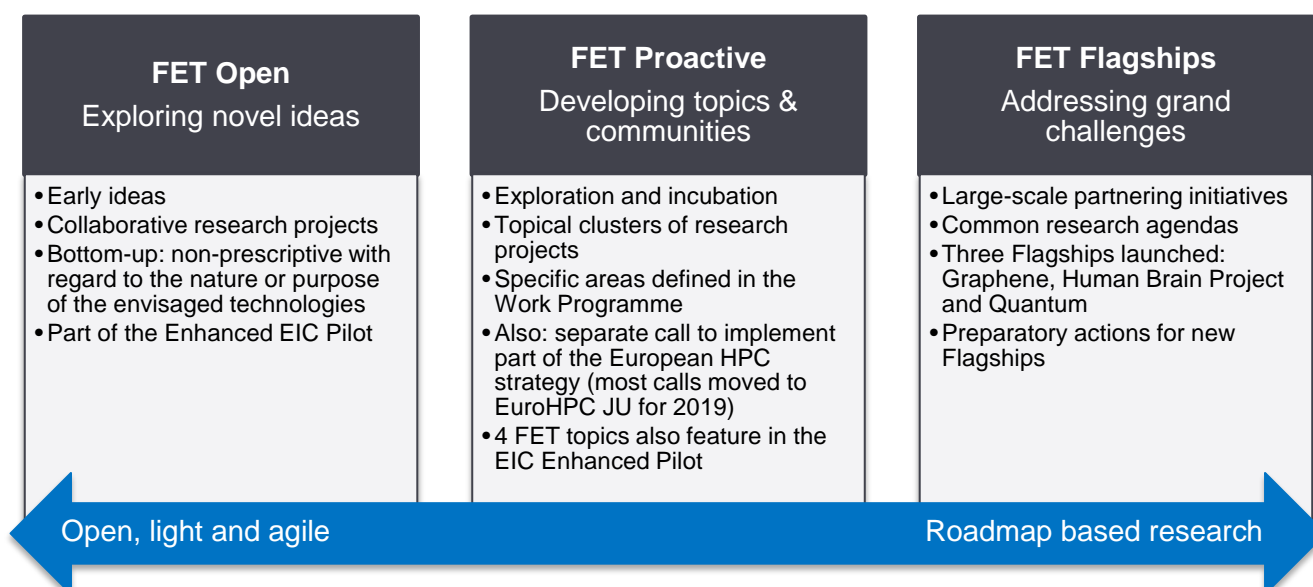
# UKRO Horizon 2020 Condensed

## 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 (including the implementation of part of the High Performance Computing (HPC) strategy) and FET Flagships. The FET-Open call is a part of the Enhanced European Innovation Council (EIC) pilot and four FET Proactive topics also feature in the European Innovation Council Enhanced Pilot (2019-2020), as part of the Pathfinder Pilot.



### 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.

Some further FET Proactive topics are part of the European Innovation Council (EIC) Enhanced Pilot. These invite for proposals on Human-Centric AI, Implantable autonomous devices and materials,

Breakthrough zero-emissions energy generation for full decarbonisation as well as on EIC transition to innovation activities.

Community building and innovation ecosystem development have been 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. As a result, most of the topics under this call have been removed from the FET work programme and transferred to the EuroHPC Joint Undertaking. 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 an 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 preparatory actions for new Flagships. FET also kick starts a new large-scale research initiative on Future Battery Technologies featuring in the cross-cutting call "Building a Low-Carbon, Climate Resilient Future: Next- Generation Batteries".

**FET Innovation Launchpad** aims at turning results from FET-funded projects into genuine societal or economic innovations. For the 2020 FET work programme, grants awarded under this topic as a result of proposals submitted as of 9 October 2019, the costs will be declared based on lump sums of a fixed total amount (€0.1m) for each grant.

## Call information and timings

FET Open call for Research and Innovation Actions (RIAs) has deadlines on 24 January 2019, 18 September 2019 and 13 May 2020. The FET Open call for CSAs has deadlines on 8 October 2019 and 14 October 2020. FET Proactive calls opening in November 2019 have a deadline on 22 April 2020. FET proactive topics included under the Enhanced European Innovation Council pilot have deadlines on 8 October 2019 and 22 April 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.

## 2020 Update to the FET Work Programme

Following the adoption of the final updates for the 2018-2020 Work Programme on 2 July 2019, the 2018-2020 Future and Emerging technologies (FET) work programme part is now available on the Participant Portal. Topics, dates and budget relating to 2020 have now been updated.

Changes in the updated work programme part for FET include the integration of FET-Open and parts of FET-Proactive into the European Innovation Council (EIC) enhanced pilot and an increased budget in certain areas. The FET Proactive budget for 2019 is increased with €45.4 million dedicated to climate

change related research and transition activities, there are planned calls to further support the Quantum and Graphene FET Flagships and a large-scale research initiative on future battery technologies is included in the budget and detailed in the Cross Cutting part of the Horizon 2020 work programme. Also, FET Innovation Launchpad is included in the Lump Sum pilot for the 2020 call deadline.

### More information:

- European Commission Research and Innovation Participant Portal for:
  - Calls for proposals  
[ec.europa.eu/research/participants/portal/desktop/en/opportunities](https://ec.europa.eu/research/participants/portal/desktop/en/opportunities)
  - Work programmes  
[ec.europa.eu/research/participants/portal/desktop/en/funding/reference\\_docs.html#h2020-work-programmes](https://ec.europa.eu/research/participants/portal/desktop/en/funding/reference_docs.html#h2020-work-programmes)
- Strategic Research Agenda of ETP4HPC  
[www.etp4hpc.eu/strategy/strategic-research-agenda/](http://www.etp4hpc.eu/strategy/strategic-research-agenda/)
- Graphene Flagship: [graphene-flagship.eu](http://graphene-flagship.eu)
- Human Brain Project: [humanbrainproject.eu](http://humanbrainproject.eu)
- Quantum Flagship: <https://qt.eu/>
- EuroHPC Joint Undertaking: <http://eurohpc.eu/>
- European Commission Horizon 2020 website: [ec.europa.eu/research/horizon2020](https://ec.europa.eu/research/horizon2020)
- European Commission announcement on the European Cloud Initiative (including investment in Quantum Technologies) [www.europa.eu/rapid/press-release\\_IP-16-1408\\_en.htm](https://www.europa.eu/rapid/press-release_IP-16-1408_en.htm)
- Sign up to the UKRO Portal to stay up to date on Horizon 2020 general developments, calls, events and results: [ukro.ac.uk](http://ukro.ac.uk)
- For specific questions, contact your UKRO European Advisor