

# Science Europe Policy Brief



On FET Flagships  
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Shaping the future of research

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## Introduction

This policy brief is a contribution from Science Europe to the evaluation and development of Future and Emerging Technologies (FET) Flagships<sup>1</sup> under Horizon 2020 and the next Framework Programme for research and innovation (FP9).

Complementing the Science Europe Position Statement on ‘The Framework Programme that Europe Needs’,<sup>2</sup> this policy brief aims to:

- ▶ highlight lessons learned about the added value and limitations of the current FET Flagships;
- ▶ provide recommendations for the development of the FET Flagship instrument to the independent high-level experts evaluating the FET Flagship instrument; and
- ▶ contribute to the high-level round table on the ‘Future of FET Flagships’, organised by the European Commission (EC) on 15 December 2016.

In addition to a technical review carried out in mid-2016,<sup>3</sup> the FET Flagship instrument is being evaluated by an independent panel of high-level experts as part of the Horizon 2020 interim evaluation.<sup>4</sup> On 24 October 2016, the EC, together with the Graphene Flagship and Human Brain Project consortia, published a joint report<sup>5</sup> on the lessons learned after the 30-month project ramp-up phase, which will feed into the evaluation of the instrument.

Science Europe, as a key European Research Area (ERA) stakeholder, wishes to make a timely contribution to the ongoing developments, based on the expertise of its Member Organisations (MOs). Science Europe MOs, major research funding and performing organisations, are directly involved in the development of the FET Flagship instrument, especially as this instrument relies on 50% co-funding from public and private institutions.

# FET Flagships Have a Clear European Added Value ...

The EC defines FET Flagships as “science-driven, large-scale, multidisciplinary research initiatives built around an ambitious unifying vision”.<sup>6</sup> Science Europe acknowledges that the FET Flagship instrument is a comprehensive co-ordinated European effort to create a unique model for cross-disciplinary and cross-sectoral collaboration on a common theme. In particular, this instrument:

## **1. Builds a sustainable environment for research-based innovation**

By combining excellent science and innovation, FET Flagship is a strong instrument to support research-based radical innovation. It creates an environment that attracts researchers with excellent track records. The scale and size of the instrument has the potential to allow large consortia from academia and industry to work cohesively together. This strengthens the relationship between these two sectors and offers new partnership opportunities, building a network that can go beyond the ten-year duration of the project. It also enables the structuring of research communities around multidisciplinary themes of pan-European strategic importance.

## **2. Co-ordinates and fosters strategic investment from different funding sources**

The FET Flagship instrument can secure long-term funding that should allow stakeholders to build a coherent programme. It fosters strategic and diversified investments, focusing not only on ‘high-risk high-gain’ research, but also covering a spectrum of use-oriented developments. It complements national actions, as well as existing European instruments such as FET Open, FET Proactive or European Research Council (ERC) individual grants. It also enables the co-ordination of funding efforts, combining EU funding with funding from Member States and Associated Countries and private entities.

## **3. Drives European Research and innovation in a strategic domain to the next level**

The large scale of the project can create a critical mass that could advance research on a specific topic in a co-ordinated way, avoiding redundancies and boosting research and innovation. As a result, FET Flagships tackle specific and strategically focused grand challenges with potential for high societal and economic impact, and receive a considerable public attention. The FET Flagships can be tools to increase Europe’s competitiveness with other global players. These players have strategic investments in key technologies with societal and economic impact related to the FET Flagships, allowing Europe to achieve faster results and a leading position on strategic topics.



# ... but also Have Limitations in their Current Implementation ...

Despite the fact that FET Flagships represents a unique model, with high added value, there are concerns that need to be addressed in order to give current and future Flagships the best conditions to achieve their mission. Science Europe would like to highlight three key interconnected limitations that need to be addressed:

## 1. The lack of efficient, transparent and flexible governance structure

FET Flagships need to have an efficient, transparent and flexible governance structure.

Depending on the specificities of the FET Flagship initiative, a flexible and possibly decentralised structure could be foreseen, based on various federated projects or regional hubs that should include excellent partners from various European regions and countries.

The Flagship instrument should also be more open and flexible in terms of collaboration with new institutions, thus avoiding the exclusion of excellent research teams. This would result in a higher acceptance by the research communities and an improved dialogue with society. In this respect, the US BRAIN initiative<sup>7</sup> can be considered as an example of good practice, being leaner in its governance and management and more open to competition for funding the best teams all over the US.

## 2. The high complexity of the administrative and management procedures

The fact that the consortia behind the FET Flagships have grown rapidly has made them complicated to manage. As acknowledged in the report 'FET Flagships, Lessons learned from the first 30 months of their operation',<sup>8</sup> this demands professional management and administrative capacity within the project. A reassessment of the administrative and management practices should be pursued.

In addition, the size of the consortia and their current management can restrict the capacity for making sound scientific decisions. The instrument should provide room for bottom-up initiatives to emerge during the project execution, giving rise to new discoveries and scientific progress in the field. The size of the Core Project could be adapted to the specific needs of each Flagship initiative.

## 3. An insufficient pooling of national funding

The contributions from the Member States and Associated Countries are not matching initial expectations, causing delays as well as reducing human and financial resources for the implementation of the Flagships.

The way that national research and development programmes are combined with the Flagships deserves more attention from the early set-up phase. The combination of EU and national funding is not optimal and public funding organisations should be more involved in the selection and governance of the FET Flagships to ensure a long-term commitment.

They should be considered as partner organisations, not just funding providers. In particular, a joint technical monitoring of the overall Flagship activities (Core and Partnering Projects) involving both the EC and the funders of the Flagship Partnering Projects would enhance the co-ordination and co-ownership of the programme. The objective of the Core Project should be not only to solve the addressed challenge, but also to leverage other sources of funding and to co-operate with other actors.

## ... which Should Be Thoroughly Evaluated and Addressed for Future Initiatives

Science Europe believes that the launch of new FET Flagships should be considered and prepared in the run-up to FP9, but should take into account the results of a thorough evaluation in order to address the limitations of the current implementation of the instrument. Science Europe calls for a transparent process for the selection of new topics for the FET Flagship instrument and a constructive debate on restructuring the initiative to ensure that it is optimally designed to support the established goals, resolve any problems, and leverage the full added value of the instrument. This process should not be rushed.

As a first step, Science Europe welcomes the ongoing evaluation exercises,<sup>9</sup> which should further analyse and evaluate the implementation process of current FET Flagships in terms of results, impact, management and efficiency (output vs. input). There should be enough flexibility to include lessons learned and possible improvements identified during the evaluation. The preparation of the future FET Flagships needs to involve all relevant actors, research funding and performing organisations included.

There should be a fair and transparent process for the selection of new Flagships and a thorough evaluation should also determine selection criteria. Science Europe recommends that true interdisciplinary and long-term vision, scientific excellence, as well as the maturity and potential of a scientific domain should be key guiding principles when selecting new Flagships. The selected areas should also bring Member States and Associated Countries to a common vision and should reflect where pan-European action is needed. They should attract the best researchers and have a strong societal and economic expected impact.

Future FET Flagships should further seek for links with other international initiatives of similar scale and ambition and be open to global participation under appropriate conditions.

Science Europe also invites the EC to clarify its plans on the establishment of a European Innovation Council (EIC) and any links that may be made between the EIC and the FET Programme.

Finally, although the current Flagships are very useful vehicles for interdisciplinary collaboration and for bringing European research and innovation in a strategic area to the next level, the formation of new FET Flagships should not jeopardise the budget for FET Open and FET Proactive, both of which are already facing high demand and have very low success rates – below 5% in the case of FET Open.

## Notes and References

1. FET Flagships are large-scale and long-term research initiatives addressing grand scientific and technological challenges. The aim of this new partnering model between the European Commission and the Member States is to foster long-term collaborative and interdisciplinary research in context of the European Research Area. Since October 2013 two FET Flagships have been launched under Horizon 2020, namely the HUMAN BRAIN PROJECT (HBP) and GRAPHENE. They both have a 10-year mandate and aim to mobilise €1 billion of funding each, half of which comes from the EU.
2. Science Europe Position Statement 'The Framework Programme that Europe Needs – Contribution to the Horizon 2020 Interim Evaluation: Lessons Learnt and the Way Forward', available at <http://scieur.org/h2020-position>
3. GRAPHENE Flagship review and highlights of technical achievements available at [http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc\\_id=17006](http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=17006)  
HBP Flagship review and highlights of technical achievements available at [http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc\\_id=17075](http://ec.europa.eu/newsroom/dae/document.cfm?action=display&doc_id=17075)
4. More information on the evaluation and the high-level expert panel available at <https://ec.europa.eu/digital-single-market/en/blog/fet-flagships-interim-evaluation-best-yet-come-0>
5. Report from the European Commission (DG Connect), GRAPHENE, and the HUMAN BRAIN PROJECT: 'FET Flagships, Lessons learned from the first 30 months of their operation', October 2016, available at <https://ec.europa.eu/digital-single-market/en/news/fet-flagships-lessons-learnt>
6. <https://ec.europa.eu/futurium/en/content/fet-flagships>
7. More information on the US BRAIN initiative available at <https://www.braininitiative.nih.gov/about/index.htm>
8. Report from the European Commission (DG Connect), GRAPHENE, and the HUMAN BRAIN PROJECT: 'FET Flagships, Lessons learned from the first 30 months of their operation', October 2016, available at <https://ec.europa.eu/digital-single-market/en/news/fet-flagships-lessons-learnt>
9. This includes technical review of the two Flagships carried out in mid-2016, the ongoing evaluation of FET Flagship instrument by an independent panel of high-level experts as part of the Horizon 2020 interim evaluation and the joint report on the lessons learned after the 30-month project ramp-up phase published in October 2016 by the EC, together with the Graphene Flagship and Human Brain Project consortia.

Science Europe is a non-profit organisation based in Brussels representing major Research Funding and Research Performing Organisations across Europe.

More information on its mission and activities is provided at [www.scienceeurope.org](http://www.scienceeurope.org).

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