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## Horizon Europe: The Next Multiannual Framework Programme

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SUMMARY: 1. Regulatory Background. - 2. History of Multiannual Framework Programmes: 1984 – 2021. - 3. New Phase 2021 – 2027. - 4. Associated Countries and impact of Brexit. - 5. Joint Undertakings and the example of SESAR in the aviation sector. - 6. Conclusion.

1. Pursuant to Article 173 of the [Treaty on the Functioning of the European Union \(TFEU\)](#), the European Union (EU) and its Member States are obliged to ensure that the necessary conditions exist for the competitiveness of the Union's industry. Such actions shall be targeted towards:

- i. 'speeding up the adjustment of industry to structural changes,
- ii. encouraging an environment favourable to initiative and to the development of undertakings throughout the Union, particularly small and medium-sized undertakings,
- iii. encouraging an environment favourable to cooperation between undertakings,
- iv. fostering better exploitation of the industrial potential of policies of innovation, research and technological development.” (Art. 173(1) TFEU).

To help achieve these objectives, both the European Parliament and the Council may decide on specific measures (i.e. via the ordinary legislative procedure). Article 182(1) of the TFEU then expands on this as it states that the European Parliament and the Council shall adopt a multiannual framework programme (FP).

To implement the FP – as detailed in Article 183 of the TFEU – the EU shall “determine the rules for the participation of undertakings, research centres and universities” and “lay down the rules governing the dissemination of research results”.

This article will discuss the origins of the EU's FP initiatives, starting in 1984 and reflect on the latest instalment, which is in its infancy, having only started in late 2021, whereby the first calls opened on [7 December 2022](#).

2. Since 1984, the EU’s research and technological development activities have been defined and implemented through a series of FPs with various amounts of available funding. [As of 2022](#), there have been a total of 9 FPs:

<b>Framework Package</b>	<b>Years</b>	<b>Funding in € billion</b>
FP1	1984 – 1988	3.75
FP2	1987 – 1991	5.4
FP3	1990 – 1994	6.6
FP4	1994 – 1998	13.2
FP5	1998 – 2002	15.0
FP6	2002 – 2006	17.5
FP7	2007 – 2013	55.5
FP8 (Horizon 2020)	2014 – 2020	77
FP9 (Horizon Europe)	2021 – 2027	95.5

These FPs are the main financial tool in which the EU supports research and development activities. From 2014-2020, FP8 – or as it is more commonly known “[Horizon 2020](#)” – was the EU’s most ambitious research and innovation funding programme. It had a budget of nearly €80 billion over its 7-year life. As FPs drive innovation, economic growth, creates jobs, boosts the EU’s technological sovereignty, and improve the lives of EU citizens, there was strong political backing from the EU’s leaders, the EU Institutions (European Parliament and Commission), as well as from industry for Horizon 2020.

Each FP is finite in terms of duration. Consequently, [Regulation \(EU\) No 1291/2013](#) of the European Parliament and of the Council of 11 December 2013, which established Horizon 2020 and set out the Framework Programme for Research and Innovation (2014-2020), gave a legally determined time frame for FP8. Notably, Article 3 stated that “Horizon 2020 is hereby established for the period from 1 January 2014 to 31 December 2020”. As a result, at the end of that period, if the EU desired to continue funding research and development via this mechanism, a new FP would be required.

3. In 2018, the [European Commission](#) proposed a €100 billion research and innovation programme to succeed Horizon 2020, which has been called “Horizon Europe”.

The budget was a major point of debate among the concerned stakeholders. One point of discussion was Brexit as the United Kingdom (UK) was a large net contributor to the EU, so the EU’s reduced membership meant a reduction in available money for Horizon Europe. Further, the remaining Member States struggled to reach a consensus on how the budget ought to be spent. This, combined with national budgetary concerns, exacerbated by the

COVID-19 pandemic, resulted in an agreement on the total budget being hard to agree upon.

In the first half of 2019, both the European Parliament and the Council reached a provisional agreement on Horizon Europe. After numerous [debates, modifications and disagreements](#), the EU Institutions reached a political agreement on 11 December 2020, which – among other things – set the budget at [€95.5 billion](#). With the political backing from the whole EU, the European Parliament and the Council proceed with the adoption of the legal acts.

Regulation (EU) No 1291/2013 was, therefore, repealed by [Regulation \(EU\) 2021/695](#) of the European Parliament and of the Council. Per Article 1(1): “This Regulation establishes Horizon Europe - the Framework Programme for Research and Innovation (the 'Programme') for the duration of the MFF [Multi-Annual Financial Framework] 2021-2027, sets out the rules for participation and dissemination concerning indirect actions under the Programme and determines the framework governing Union support for R&I activities for the same duration”.

The new Regulation contains the legally binding rules on the:

- i. objectives of the Programme;
- ii. budget for the period 2021 to 2027;
- iii. formation of EU funding and the rules for providing such funding;
- iv. participation by undertakings, research centres and universities; and
- v. dissemination of research results.

It is posited by the EU Institutions that this Regulation simplifies the rules, as compared to previous iterations, by increasing legal certainty and reducing the administrative burden for beneficiaries and program managers. Time will tell if this is truly the case as it has yet to be tested in any substantial way as Horizon Europe is still in its infancy.

Regulation (EU) 2021/695 can, therefore, be seen as a foundational document for FP9, whereby it is complemented by [Council Decision \(EU\) 2021/764](#).

Horizon Europe is an ambitious funding programme for research and innovation, whereby the main objectives are to strengthen research, science and technology within the EU via increased investment; boost investment in research and people, which will boost the EU’s industrial competitiveness; as well as support the EU in achieving its strategic properties (e.g., the [Paris Climate Agreement](#)). To achieve this, FP9 has been organised into 3 pillars, per Article 3 of Council Decision (EU) 2021/764:

- i. [Excellent Science](#): Pillar 1 aims to increase the EU’s global scientific competitiveness by supporting ground-breaking research projects. This should be both defined and driven by the top researchers.
- ii. [Global Challenges and European Industrial Competitiveness](#): Pillar 2 supports research with regard to societal challenges and focuses on six clusters. These are *a*) health; *b*) culture, creativity and inclusive society; *c*) civil security for society; *d*) digital,

industry and space; e) climate, energy and mobility; f) food, bioeconomy, natural resources, agriculture and environment.

- iii. [Innovative Europe](#): Via the European Innovation Council (EIC), Pillar 3 aims to make Europe a leader in market-creating innovation. To achieve this, this will involve promoting the integration of business, research, higher education and entrepreneurship.

The introduction of the [EIC](#) in March 2021 is marked as a significant addition to the new FP as it is tasked with supporting researchers, start-ups and small and medium-sized enterprises (SMEs) with bringing their innovations to market. Here, support is given in the forms of funding, networking and partnership opportunities, and business acceleration services.

At the core of these are ambitious and bold goals designed to tackle problems that affect EU citizens' daily lives. Therefore, it aims at impacting the wider society, so as to offer solutions to real societal questions. This is a positive approach as public money is spent on improving society.

An essential discussion when actualising Horizon Europe was who should be the partners. In the spirit of having a wide benefit across the EU, it is open to start-ups, SMEs, universities, research organisations and companies. This not only includes large entities, but also smaller ones, so as to allow a wide range of skills and knowledge to participate, as well as benefit.

4. Although this is an EU activity, participation goes beyond just the EU Member States, as it also includes [Associated Countries](#): Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Iceland, Israel, Kosovo, Moldova, Montenegro, North Macedonia, Norway, Serbia, Tunisia, Turkey and Ukraine. Applicants from Associated Countries can participate under conditions equivalent to legal entities from EU Member States, albeit subject to some limitations on a case-by-case basis and without formal decision-making power over the programme (Article 16, Reg. (EU) 2021/695).

Not all former participating countries are Associated Countries. For example, [Switzerland](#) is currently treated as a non-associated 'third country'. Swiss entities are able to participate in most calls, but funding is provided by the Swiss Government. Switzerland is nevertheless committed to joining Horizon Europe.

The UK, following Brexit, is no longer an EU Member State so would have to join as an Associated Country. The [UK-EU Trade and Cooperation Agreement \(TCA\)](#) includes provisions for the UK to continue its participation in EU programmes and activities. However, the TCA does not define which programmes the UK will participate in: that has to be specified in a separate Protocol (Article 710 TCA).

A [joint declaration](#) adopted by the EU and the UK alongside the TCA states that an agreement in principle has already been reached and contains a draft of this protocol (Protocol I) to be signed after the adoption of the MFF (still under approval at the conclusion of TCA in December 2020).

Even if the TCA provisionally applied since 1 January 2021 and entered into force on 1 May 2021, the UK's participation in Horizon Europe has not yet been agreed upon. The Commission is currently blocking this as it has tied association with wider political issues; i.e., the dispute over [the Northern Ireland Protocol](#). In order to support UK Horizon Europe applicants, the UK Government has [extended](#) funding support until March 2023 to allow them to continue their [research and innovation](#).

After a request from the UK, formal consultations with the EU took place before the Specialised Committee on Participation in Union Programmes (see Article 8(1)(s) TCA). This represents the first stage in the dispute settlement mechanism set out by the TCA, after which the matter can be referred to an [independent arbitration tribunal](#).

As of writing, the Specialised Committee met on [two occasions](#) but [no agreement](#) on this had been formalised. It looks probable that the UK will have to resort to [national funding solutions](#) or even request for the establishment of the arbitration tribunal under Part VI of the TCA, an unprecedented occurrence and a possible test for the overall coherence of the TCA legal framework. In the meanwhile, legal uncertainties may convince UK-based scholars to [relocate their projects](#) inside the EU.

The UK may then decide to become a third-country to Horizon Europe, such as the route pursued by Switzerland. However, this may be less appealing for the UK, so it may choose to pursue its own research and technological development programme, which is unconstrained by the EU regulatory framework and can have a stronger national focus in terms of participating entities, and aims and objectives.

The inclusion of Associated Members has led to some criticism as it allows non-EU entities to benefit from EU funds. However, there shall be a link between the benefits derived from Horizon Europe and the outcome. Further, 'calls' often require the cooperation of at least three entities, from three different countries. Thus, the EU benefit is spread wider, thus giving it a pan-Europe benefit.

**5.** In order to achieve the goals of Horizon Europe, Article 187 of the TFEU is relied on as it specifies that the EU may set up joint undertakings (JUs). As a result, the Article has been used as the legal basis to set up public-private partnership (PPPs) bodies in order to integrate industrial research in the highlighted areas. Supporting the Horizon Europe Regulation, there is [Council Regulation \(EU\) 2021/2085](#) of 19 November 2021, which establishes the JUs under Horizon Europe. This Regulation is often referred to as the 'Single Basic Act', because it covers all of the JUs together, rather than having separate regulations for each. This was a point of concern during the negotiation stage, as it was felt that the nuances of each JU would be lost in a general text. This issue seems to have been solved, as the Regulation also contains Specific Provisions of Individual Joint Undertakings per Part Two.

Per Article 1, nine partnerships have been created:

- i. Circular Bio-based Europe

- ii. Clean Aviation
- iii. Clean Hydrogen
- iv. Europe's Rail
- v. Global Health EDCTP3
- vi. Innovative Health Initiative
- vii. Key Digital Technologies
- viii. Single European Sky Air Traffic Management Research
- ix. Smart Networks and Services

Several of these JUs are continuations of those existing under Horizon 2020, whereby some have changed their names or are new to FP9. Therefore, while FP9 has a finite life, each JU has its own history, as some are continuing the work from previous FPs while others are starting new.

As noted in Regulation (EU) 2021/2085, JUs are “set up to deliver on Union priorities targeted by Horizon Europe and ensure a clear impact for the Union and its people, which can be achieved more effectively in partnership, through a strategic vision that is shared and committed to by partners, rather than by the Union alone” (recital No. 1). The EU will provide funding, whereby the JU partners will match with at least an equivalent amount of investment. The JUs adopt their own research agenda, centred around their dedicated focus, being both objective-driven and ambitious, and award funding mainly on the basis of open calls. For the exact membership, a reference to the Annexes of the Regulation is required.

As way of an example, the Single European Sky Air Traffic Management Research (SESAR), will be discussed below. Under Horizon 2020, the previous FP, this JU was referred to as “SESAR 2” and now it is in its third iteration, so it is commonly referred to as “SESAR 3”. This JU is “set up to accelerate through research and innovation the delivery of the Digital European Sky. To do so, it is harnessing, developing and accelerating the take-up of the most cutting-edge technological solutions to manage conventional aircraft, drones, air taxis and vehicles flying at higher altitudes” (see [SESAR website](#)). As can be seen here, it has an aviation focus, narrowing in specifically on air traffic management. Other JUs have their own sector and specific focus. Therefore, each must be assessed individually within the parameters of Regulation (EU) 2021/2085.

One way to assess the success of Horizon Europe is via its results. While there were numerous successes during Horizon 2020, SESAR JU highlights a key problem and that is of market uptake and deployment. Horizon Europe is focused on research and development, so emphasis is on the lower Technology Readiness Levels (i.e., technology whose market is still in its infancy). However, once the ATM technology is designed, made and tested, it needs to be deployed into the ATM ecosystem. This requires stakeholders to buy and use such technology, so its benefits can be actualised. While the manufacturers are actively producing new ATM technology out of SESAR-JU calls, there is a reluctance from end-users to adopt it. ATM technology is expensive. Therefore, stakeholders can be hesitant to adopt new technology unless they are mandated to (e.g., via safety regulations) or they see a strong business case

to do so. Therefore, the technology may never get deployed, which results in a waste of resources. Uptake could have been facilitated by regulatory mandates, however, this was not supported by the EU. Alternatively, there could have been incentives that reward earlier movers. Again, this was not supported by the EU. SESAR is active in deployment activities, so it is helping to mitigate the risk, but uptake is, at the end of the day, a business decision.

There are imposed mandates for States to implement the outcomes of the SESAR work via [Regulation 2021/116](#) on the Establishment of the Common Project One Supporting the Implementation of the European Air Traffic Management Master Plan. In addition, the European Commission is considering launching infringement procedures against States that do not implement the technologies by the stated deadlines. However, it will have to be seen how infringement procedures, aimed at Member States, may act as a lever on encouraging industry to comply with the new technological standards.

The above-mentioned decision to have a wide level of inclusion of private stakeholders lead to some pushback from FP8 JU members. This has been seen in two main ways. First, some new members of JUs have questionable links to the EU. While some of these companies have a foothold, such as being EU-based subsidiaries of non-EU companies or locating a part of their activities in the EU, they are regarded by some as being third-country companies. SESAR 3, as an example, currently has 40 Members, of which some could be deemed as non-EU companies. Further, the growth in members, from 20 during SESAR 2 to 40 in SESAR 3, has led [some to question](#) whether effective governance can take place with so many voices around the table. Second, when a consortium is made for a specific call, not every member must be from the EU. Therefore, non-EU stakeholders are capable of benefiting from Horizon Europe, while, on the other hand, they will be unable to benefit from similar initiatives in other countries outside of the EU. Thus, this lack of reciprocity creates an uneven playing field.

**6.** In conclusion, Horizon Europe is a significant achievement that will accelerate research and technology, which will bring wide-ranging benefits to society. Despite numerous discussions on funding rates, membership and the number of JUs, just to name a few, the legal framework is now in place and the work has started. Therefore, calls for [2023-2024](#) are being published and entities are able to submit proposals on far-ranging topics. Therefore, those reading this are encouraged to survey the different calls and answer any relevant ones within a diverse consortium, so that the goals of Horizon Europe can be achieved. Further, the FP will continue beyond 2024, whereby there will be opportunities for stakeholders to shape future calls. Again, those reading this, who are at the heart of EU research, are encouraged to monitor this and steer the existence of future calls.

The success of Horizon Europe will take time to be known, but to ensure this, the core ideals of benefiting society, promoting research and

development, and output that is accessible and beneficial are key, of which, involvement and input from all stakeholders are fundamental.