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To: Delegations

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Subject: Horizon Europe package: Framework Programme for Research and Innovation 2021-2027
-Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination
- Partial general approach

1. Delegations will find attached the text of the partial general approach on the above-mentioned proposal, as adopted by the Council (COMPET) at its meeting on 30 November 2018.
HU could not support the PGA.

2. Regarding the structure of the Programme as set out in Article 4, the following clarification has been agreed by Council: The Programme Committee configurations are listed in Annex II of the Specific Programme. Ad-hoc meetings could be organised within the clusters and/or with different Programme Committee configurations and/or with Committees established by other acts on horizontal and/or cross-cutting issues, such as space.
3. When finalising the discussion on the outstanding elements of the Horizon Europe regulation, the following recital will be added: *Without prejudice to the overall MFF negotiations, Horizon Europe will contribute to space objectives at a level of spending that is at least commensurate proportionally with that under the previous framework programme Horizon 2020 established by Regulation (EU) No 1291/2013 of the European Parliament and the Council.*
4. The statement by Hungary on Widening issues within Horizon Europe, the statement by Italy on budget implementation, the statement by Malta on Human Embryonic Stem Cell Research, and the statement by Slovakia, Croatia, the Czech Republic, Hungary and Lithuania on the Commission remuneration model within the Horizon Europe programme proposal, included in the Addendum to this document, are entered into the Council's minutes.
5. Since Horizon Europe is linked to the Multiannual Financial Framework (MFF), all provisions with budgetary implications are square bracketed (not part of the partial general approach). Synergies linked to financing from various funds are also in brackets. Several provisions of various Articles or Annexes¹ are therefore excluded from the Partial General Approach.
6. The same goes for objectives and broad lines of activities of the European Defence Fund² and on provisions concerning third countries associated to Horizon Europe³, which are of a horizontal nature and depend on progress in other files.
7. Furthermore, the provisions concerning the European Institute of Innovation and Technology (EIT) in Annex 1a are in brackets subject to further negotiations at technical level.

¹ Articles 8, 9, 11, 18, 23 and Annex IV.

² Article 5.

³ Articles 12, 18 and 19.

**PROPOSAL FOR A REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE
COUNCIL ESTABLISHING HORIZON EUROPE – THE FRAMEWORK PROGRAMME
FOR RESEARCH AND INNOVATION, LAYING DOWN ITS RULES FOR
PARTICIPATION AND DISSEMINATION**

TITLE I

GENERAL PROVISIONS

Article 1

Subject matter

1. This Regulation establishes Horizon Europe - the Framework Programme for Research and Innovation ('the Programme') and the rules for participation and dissemination in indirect actions under the Programme.
2. It lays down the objectives of the Programme, the budget for the period 2021 – 2027, the forms of Union funding and the rules for providing such funding.
3. The Programme shall be implemented through:
 - (a) the specific programme established by Decision .../.../EU⁴;
 - (aa) a financial contribution to the EIT established by Regulation (EC) No 294/2008;
 - (b) the specific programme on defence research established by Regulation .../.../EU Regulation of the European Parliament and of the Council establishing the European Defence Fund.

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4. The terms 'Horizon Europe', 'the Programme' and 'specific programme' used in this Regulation address matters relevant only to the specific programme described in paragraph 3(a), unless otherwise explicitly stated.

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

- (1) 'research infrastructures' mean facilities that provide resources and services for the research communities to conduct research and foster innovation in their fields. This definition includes the associated human resources, and it covers major equipment or sets of instruments; knowledge-related facilities such as collections, archives or scientific data infrastructures; computing systems, communication networks, and any other infrastructure, of a unique nature and open to external users, essential to achieve excellence in research and innovation. Where relevant, they may be used beyond research, for example for education or public services and they may be 'single sited', 'virtual' or 'distributed';
- (2) 'smart specialisation strategy' has the same meaning as smart specialisation strategy as defined in Regulation (EU) No 1303/2013 of the European Parliament and of the Council⁵ and fulfilling the enabling conditions set out in Regulation (EU) XX [Common Provisions Regulation];

⁵ Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) No 1083/2006.

- (3) 'European Partnership' means an initiative where the Union, prepared with early involvement of Member States and/or Associated Countries, together with private and/or public partners (such as industry, research organisations, bodies with a public service mission at local, regional, national or international level or civil society organisations including foundations), commit to jointly support the development and implementation of a programme of research and innovation activities, including those related to market, regulatory or policy uptake;
- (4) 'open access' means the practice of providing online access to research outputs resulting from actions funded under the Programme, free of charge to the end-user, in accordance with Article 10 and 35(3) of this Regulation;
- (4a) 'open science' means a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools;
- (5) 'mission' means a portfolio of actions across disciplines and sectors, intended to
- achieve, within a set timeframe, a measurable goal that could not be achieved through individual actions,
 - have impact on society through science and technology, and
 - be relevant for a wide range of European citizens;
- (6) 'pre-commercial procurement' means the procurement of research and development services involving risk-benefit sharing under market conditions, and competitive development in phases, where there is a clear separation of the research and development services procured from the deployment of commercial volumes of end-products;
- (7) 'public procurement of innovative solutions' means procurement where contracting authorities act as a launch customer for innovative goods or services which are not yet available on a large-scale commercial basis, and may include conformity testing;
- (8) 'access rights' means rights to use results or background;

- (9) 'background' means any data, know-how or information whatever its form or nature, tangible or intangible, including any rights such as intellectual property rights, that is held by beneficiaries prior to their accession to the action and identified by the beneficiaries in writing as needed for implementing the action or for exploiting its results;
- (10) 'dissemination' means the public disclosure of the results by appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium;
- (11) 'exploitation' means the use of results in further research and innovation activities other than those covered by the action concerned, or in developing, creating, manufacturing and marketing a product or process, or in creating and providing a service, or in standardisation activities;
- (12) 'fair and reasonable conditions' means appropriate conditions, including possible financial terms or royalty-free conditions, taking into account the specific circumstances of the request for access, for example the actual or potential value of the results or background to which access is requested and/or the scope, duration or other characteristics of the exploitation envisaged;
- (13) 'funding body' means a body or organisation, other than the Commission, as referred to in point (c) of Article 62(1) of the Financial Regulation, to which the Commission has entrusted budget implementation tasks under the Programme;
- (14) 'international European research organisation' means an international organisation, the majority of whose members are Member States or associated countries, and whose principal objective is to promote scientific and technological cooperation in Europe;
- (15) 'legal entity' means any natural or legal person created and recognised as such under national law, Union law or international law, which has legal personality and which may, acting in its own name, exercise rights and be subject to obligations, or an entity without a legal personality in accordance with Article 197(2)(c) of the Financial Regulation;

- (16) 'non-profit legal entity' means a legal entity which by its legal form is non-profit-making or which has a legal or statutory obligation not to distribute profits to its shareholders or individual members;
- (16a) 'SME' means micro-, small- and medium-sized enterprise as defined in Commission Recommendation 2003/361/EC⁶;
- (17) 'small mid-cap' means an entity employing up to 499 employees that are not SMEs;
- (17a) 'start-up' means a temporary organisation in the early stage in the life cycle of an enterprise, creator of innovation designed to search for a repeatable and scaleable business model;
- (18) 'results' means any tangible or intangible effect of the action, such as data, know-how or information, whatever its form or nature, whether or not it can be protected, as well as any rights attached to it, including intellectual property rights;
- (18a) 'research outputs' mean results to which online access can be given in the form of scientific publications, data or other engineered outcomes and processes such as software, algorithms, protocols and electronic notebooks;
- (19) 'seal of excellence' means a certified label which shows that a proposal submitted to a call for proposals exceeded all of the evaluation thresholds set out in the work programme, but could not be funded due to lack of budget available to that call in the work programme;
- (20) 'work programme' means the document adopted by the Commission for the implementation of the specific programme⁷ in accordance with its Article 12 or the equivalent document in content and structure adopted by a funding body;

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⁷ OJ

- (21) 'reimbursable advance' means the part of a Horizon Europe or EIC blended finance corresponding to a loan under Title X of the Financial Regulation, but that is directly awarded by the Union on a non-profit basis to cover the costs of activities corresponding to an innovation action, and to be reimbursed by the beneficiary to the Union under the conditions provided for in the contract;
- (22) 'contract' means the agreement concluded between the Commission or a funding body with a legal entity implementing an innovation and market deployment action and supported by a Horizon Europe or EIC blended finance;
- (23) 'classified information' means EU classified information as defined in Article 3 of Commission Decision (EU, Euratom) 2015/444 as well as classified information of Member States, classified information of third countries with which the Union has a security agreement and classified information of international organisation with which the Union has a security agreement;
- (24) 'blending operation' means actions supported by the EU budget, including within blending facilities pursuant to Article 2(6) of the Financial Regulation, combining non-repayable forms of support and/or financial instruments from the EU budget with repayable forms of support from development or other public finance institutions, as well as from commercial finance institutions and investors;
- (25) 'Horizon Europe or EIC blended finance' means a single financial support to an innovation and market deployment action, consisting in a specific combination of a grant or a reimbursable advance with an investment in equity;
- (27) 'procurement' means procurement as defined in Article 2(49) of Regulation (EU, Euratom) 2018/1046 [Financial Regulation];
- (28) 'affiliated entity' means any legal entity as defined in Article 187(1) of Regulation (EU, Euratom) 2018/1046 [Financial Regulation];

- (30) 'innovation ecosystem' means an ecosystem that brings together at EU level actors or entities whose functional goal is to enable technology development and innovation. They encompass relations between material resources (such as funds, equipment, and facilities), institutional entities (such as higher education institutions and support services, RTOs, companies, venture capitalists and financial intermediaries) and national, regional and local policy-making and funding entities;
- (31) 'low R&I performing Member State' means a Member State that under Part 4, "Widening participation and sharing excellence", is eligible to submit a proposal as coordinator.

Article 3

Programme objectives

1. The Programme's general objective is to deliver scientific, technological, economic and societal impact from the Union's investments in research and innovation so as to strengthen the scientific and technological bases of the Union and foster its competitiveness in all Member States including in its industry, deliver on the Union strategic priorities, contribute to tackling global challenges, including the Sustainable Development Goals by following the principles of the Agenda 2030 and the Paris Agreement, and to strengthen the European Research Area. The Programme shall thus maximise Union added value by focusing on objectives and activities that cannot be effectively realised by Member States acting alone, but in cooperation.
2. The Programme has the following specific objectives:
 - (a) to promote scientific excellence, support the creation and diffusion of high-quality new fundamental and applied knowledge, skills, training and mobility of researchers, attract talent at all levels and contribute to full engagement of Union's talent pool in actions supported under this Programme;

- (b) to generate knowledge, strengthen the impact of research and innovation in developing, supporting and implementing Union policies, and support the uptake of innovative solutions in industry, notably in SMEs, and society to address global challenges, inter alia the Sustainable Development Goals;
- (c) to foster all forms of innovation, facilitate technological development, demonstration and knowledge transfer, and strengthen deployment of innovative solutions;
- (d) to optimise the Programme's delivery for strengthening the European Research Area, and to foster the excellence-based participations from all Member States in Horizon Europe and to facilitate collaborative links in European research and innovation.

Article 4

Programme structure

1. The Programme is structured in the following parts contributing to the general and specific objectives set out in Article 3:
 - (1) Pillar I 'Excellent Science' with the following components:
 - (a) the European Research Council (ERC);
 - (b) Marie Skłodowska-Curie Actions (MSCA);
 - (c) research infrastructures.
 - (2) Pillar II 'Global Challenges and European Industrial Competitiveness' with the following components, taking into account that social sciences and humanities (SSH) shall play an important role across all clusters:
 - (a) cluster 'Health';
 - (b) cluster 'Culture and Inclusive Society';

- (c) cluster 'Civil Security for Society';
 - (d) cluster 'Digital, Industry and Space';
 - (e) cluster 'Climate and Energy';
 - (ee) cluster 'Mobility';
 - (f) cluster 'Bioeconomy, Food, Natural Resources and Environment';
 - (g) non-nuclear direct actions of the Joint Research Centre (JRC).
- (3) Pillar III 'Innovative Europe' with the following components:
- (a) the European Innovation Council (EIC);
 - (b) European innovation ecosystems;
 - (c) the European Institute of Innovation and Technology (EIT) established by Regulation (EC) No 294/2008.
- (4) Part 'Widening participation and strengthening the European Research Area', with the following components:
- (a) widening participation and sharing excellence;
 - (b) reforming and enhancing the European R&I System.

2. The broad lines of activities are set out in Annex I.

Article 5

Activities with defence applications

1. Activities to be carried out under the specific programme referred to in Article 1(3)(b) and which are laid down in Regulation establishing the European Defence Fund, shall have an exclusive focus on defence applications, with the objective as set out in paragraph 3 of this article.
2. This Regulation does not apply to the specific programme referred to in Article 1(3)(b), with the exception of this Article, Article 1, and Article 9(1).
3. Insofar as the specific programme referred to in Article 1(3)(b) is concerned, the Programme shall have the following objectives and broad lines of activities:
 - [(a) activities aiming to foster the global competitiveness, efficiency and innovation capacity of the European defence, technological and industrial base;
 - (b) activities aiming to foster the better exploitation of the industrial potential of innovation, research and technological development, at each stage of the industrial life cycle, for defence applications, thus contributing to the Union strategic autonomy.]

Article 6

Implementation and forms of EU funding

1. The Programme shall be implemented in direct management in accordance with the Financial Regulation or in indirect management with funding bodies referred to in Article 62(1)(c) of the Financial Regulation.
2. The Programme may provide funding to indirect actions in any of the forms laid down in the Financial Regulation, in particular grants as the main form of support in the programme. It may also provide financing through prizes, procurements and financial instruments within blending operations and equity support under the EIC Accelerator.

3. The rules for participation and dissemination laid down in this Regulation shall apply to indirect actions.
4. The main types of action to be used under the Programme are set out and defined in Annex II. All forms of funding shall be used in a flexible manner across all objectives of the Programme with their use being determined on the basis of the needs and the characteristics of the particular objectives.
5. The Programme shall also support direct actions undertaken by the JRC. Where these actions contribute to initiatives established under Article 185 or Article 187 TFEU, this contribution shall not be considered as part of the financial contribution allocated to those initiatives.
6. The implementation of the Specific Programme⁸ and the EIT⁹ shall
 - (a) be facilitated by a transparent and strategic multiannual planning of research and innovation activities as laid down in the specific programme, in particular for the pillar 'Global Challenges and European Industrial Competitiveness', closely involving Member States and taking into account views of stakeholders and, if applicable, of citizens about priorities and the suitable types of action and forms of implementation to use;
 - (b) reflect international cooperation, expanding R&I collaborative links throughout the Union and beyond, open science and equal opportunities and the contributions of the social sciences and humanities as cross-cutting principles;
 - (c) ensure alignment with other relevant Union programmes and increase synergies with national and regional funding programmes and priorities, thereby strengthening the ERA.
7. Horizon Europe activities shall be primarily delivered through open, competitive calls for proposals, including within missions and European Partnerships.

⁸ [doc. 9870/18]
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8. Research and innovation activities carried out under the specific Programme referred to in Article 1(3)(a) and under the EIT shall have an exclusive focus on civil applications.
9. The Programme shall ensure the promotion of equal opportunities for all, and the implementation of gender mainstreaming, and of the gender dimension in the research and innovation content. Attention shall be paid to encouraging gender balance, subject to the situation in the field of research and innovation concerned, in evaluation panels and in bodies such as expert groups.

Article 7

Missions

1. Missions shall be programmed within the pillar 'Global Challenges and European Industrial Competitiveness', but may also benefit from actions carried out within other parts of the Programme. Missions shall be based on challenges relevant for a wide range of European citizens, allow for competing solutions, resulting in pan-European added value and impact.
2. The missions shall be defined and implemented in accordance with the Specific Programme, ensuring the active and early involvement of the Member States. Evaluation of proposals under the missions shall be carried out in accordance with Article 26.
3. Missions shall:
 - (a) have a clear research and innovation content, EU-added value, and contribute to reaching Union priorities and Horizon Europe programme objectives laid down in Article 3;
 - (b) be bold and inspirational, and have wide, scientific, technological, societal and/or economic and/or policy relevance and impact;
 - (c) indicate a clear direction and be targeted, measurable, time-bound and have a clear budget frame;

- (d) be selected in a transparent manner and be centered on ambitious but realistic goals and research, development and innovation activities;
 - (e) stimulate activity across disciplines (including Social Sciences and Humanities) and enable active participation of stakeholders from public and private sectors, including citizens and end-users and encompassing activities from a broad range of TRLs, including lower TRLs;
 - (f) be open to multiple, bottom-up approaches and solutions taking into account human and societal needs and benefits and recognizing the importance of diverse contributions to achieve these missions.
4. The Commission shall monitor and evaluate each mission in accordance with Annex V of this regulation, including progress towards short, medium and long-term targets, covering implementation, monitoring and phasing-out of the missions. A review of the first missions established under Horizon Europe shall take place no later than 2023 and before any decision is taken on creating new missions, continuing, terminating or redirecting ongoing missions.

Article 8

European Partnerships

1. Parts of Horizon Europe may be implemented through European Partnerships. The involvement of the Union in European Partnerships may take any of the following forms:
- (a) participation in partnerships set up on the basis of memoranda of understanding and/or contractual arrangements between the Commission and the partners referred to in Article 2(3), specifying the objectives of the partnership, related commitments from all involved sides for financial and/or in-kind contributions of the partners, key performance and impact indicators, outputs to be delivered and reporting modalities. They include the identification of complementary research and innovation activities that are implemented by the partners and by the Programme (Co-programmed European Partnerships);

- (b) participation in and financial contribution to a programme of research and innovation activities, specifying the objectives, key performance and impact indicators, and outputs to be delivered, based on the commitment of the partners for financial and/or in-kind contributions and integration of their relevant activities using a Programme co-fund action (Co-funded European Partnerships); [financial contributions stemming from ESIF shall be allowed and considered as a national contribution.]

- (c) participation in and financial contribution to research and innovation programmes undertaken by several Member States in accordance with Article 185 TFEU, or by bodies established pursuant to Article 187 TFEU, such as Joint Undertakings, or by the EIT Knowledge and Innovation Communities in compliance with the EIT Regulation (Institutionalised European Partnerships). Such partnerships shall be implemented only where other parts of the Horizon Europe programme, including other forms of European Partnerships would not achieve the objectives or would not generate the necessary expected impacts, and if justified by a long-term perspective and high degree of integration. Partnerships in accordance with Article 185 TFEU or pursuant to Article 187 TEFU shall implement a central management of all financial contributions, except in duly justified cases, while respecting the principle that the contribution from one participating state will not be used to support a beneficiary from another participating state, unless otherwise agreed among all participating states concerned. The rules for such partnerships shall specify inter alia the objectives, key performance and impact indicators, and outputs to be delivered, as well as the related commitments for financial and/or in-kind contributions of the partners. [Financial contributions stemming from ESIF shall be allowed and considered as a national contribution.]

2. European Partnerships shall:

- (a) Be established for addressing European or global challenges only in cases where they will more effectively achieve objectives of Horizon Europe than the Union alone. Those parts shall have an appropriate share of the budget of Horizon Europe. The majority of the budget in pillar II shall be allocated to actions outside of European partnerships;

- (b) Adhere to the principles of Union added value, transparency, openness, impact within and for Europe, leverage effect on sufficient scale, long-term financial commitment of all the involved parties, flexibility in implementation, coherence, coordination and complementarity with Union, local, regional, national and, where relevant, international initiatives or other partnerships and missions;
- (c) Have a clear life-cycle approach, be time limited and include conditions for phasing-out the Programme funding.

Provisions and criteria for their selection, implementation, monitoring, evaluation and phasing-out are set out in Annex III.

Article 9

Budget

1. The financial envelope for the implementation of the Framework Programme for the period 2021 – 2027 shall consist of [EUR 94 100 000 000 in current prices] for the specific programme referred to in Article 1(3)(a) and for the European Institute of Innovation and Technology (EIT) and [EUR13 000 000 000 in current prices] for the specific programme referred to in Article 1(3)(b).
2. The indicative distribution of the amount referred to in paragraph 1, for the specific programme referred to in Article 1(3)(a) and for the EIT, shall be:
 - (a) [EUR 25 800 000 000] for Pillar I 'Open Science' for the period 2021-2027, of which
 - (1) [EUR 16 600 000 000] for the European Research Council;
 - (2) [EUR 6 800 000 000] for Marie Skłodowska-Curie Actions;
 - (3) [EUR 2 400 000 000] for research infrastructures;

- (b) [EUR 52 700 000 000] for Pillar II 'Global Challenges and Industrial Competitiveness' for the period 2021-2027, of which
- (1) [EUR 7 700 000 000] for cluster 'Health';
 - (2) [EUR 2 800 000 000] for cluster 'Inclusive and Secure Society';
 - (3) [EUR 15 000 000 000] for cluster 'Digital and Industry';
 - (4) [EUR 15 000 000 000] for cluster 'Climate, Energy and Mobility';
 - (5) [EUR 10 000 000 000] for cluster 'Food and Natural Resources';
 - (6) [EUR 2 200 000 000] for the non-nuclear direct actions of the Joint Research Centre (JRC);
- (c) [EUR 13 500 000 000] for Pillar III 'Open Innovation' for the period 2021-2027, of which
- (1) [EUR 10 500 000 000] for the European Innovation Council, including up to [EUR 500 000 000] for European Innovation Ecosystems;
 - (2) [EUR 3 000 000 000] for the European Institute of Innovation and Technology (EIT);
- (d) [EUR 2 100 000 000] for Part 'Strengthening the European Research Area' for the period 2021-2027, of which
- (1) [EUR 1 700 000 000] for 'sharing excellence';
 - (2) [EUR 400 000 000] for 'reforming and enhancing the European R&I System'.

3. [In order to respond to unforeseen situations or to new developments and needs, the Commission may, within the annual budgetary procedure, deviate from the amounts referred to in paragraph 2 up to a maximum of [10%]. No such deviation shall be allowed in respect of the amounts referred to in points (b) (6) of paragraph 2 of this Article and the total amount set out for Part 'Strengthening the European Research Area' of paragraph 2 of this Article.]
4. The amount referred to in paragraph 1 for the specific programme referred to in Article 1(3)(a) and for the EIT may also cover expenses for preparation, monitoring, control, audit, evaluation and other activities and expenditures necessary for managing and implementing the Programme, including all administrative expenditure, as well as evaluating the achievement of its objectives. It may moreover cover expenses relating to the studies, meetings of experts, information and communication actions, in so far as they are related to the objectives of the Programme, as well as expenses linked to information technology networks focusing on information processing and exchange, including corporate information technology tools and other technical and administrative assistance needed in connection with the management of the Programme.
5. If necessary, appropriations may be entered in the budget beyond 2027 to cover the expenses provided for in paragraph 4, to enable the management of actions not completed by 31 December 2027.
6. Budgetary commitments for actions extending over more than one financial year may be broken down over several years into annual instalments.
7. Without prejudice to the Financial Regulation, expenditure for actions resulting from projects included in the first work programme may be eligible as from 1 January 2021.

8. [Resources allocated to Member States under shared management and transferrable in accordance with Article 21 of Regulation (EU) XX [...Common Provisions Regulation] may, at their request, be transferred to the Programme. The Commission shall implement those resources directly in accordance with point (a) of Article 62(1) of the Financial Regulation or indirectly in accordance with point (c) of that Article. Those resources shall be used for the benefit of the Member State concerned, unless decided otherwise by the relevant managing authority of that Member state].
9. Horizon Europe is designed to be implemented in synergy with other Union funding programmes, while seeking maximal simplification. A non-exhaustive list of synergies with other Union funding programmes is included in Annex IV.

Article 10

Open science

1. Open access to scientific publications resulting from research funded under the Programme and open access to research data, including those underlying scientific publications, shall be ensured in accordance with Article 35(3) of this regulation. The latter shall also be in line with the principle 'as open as possible, as closed as necessary'. Open access to other research outputs shall be encouraged, including for the benefit of SMEs.
2. Responsible management of research data shall be ensured in line with the principles 'Findability', 'Accessibility', 'Interoperability' and 'Reusability' (FAIR). Attention shall also be paid to the long-term preservation of data.
3. Open science practices including and beyond open access to research outputs and responsible management of research data shall be promoted and encouraged.

Article 11

Complementary funding

Actions awarded a Seal of Excellence certification, or which comply with the following cumulative, comparative, conditions:

- (a) they have been assessed in a call for proposals under the Programme;
- (b) they comply with the minimum quality requirements of that call for proposals;
- (c) they may not be financed under that call for proposals only due to budgetary constraints,

[may receive support from the European Regional Development Fund, the Cohesion Fund, the European Social Fund+ or the European Agricultural Fund for Rural Development, in accordance with paragraph 5 of Article [67] of Regulation (EU) XX [Common Provisions Regulation] and Article [8] or Regulation (EU) XX [Financing, management and monitoring of the Common Agricultural Policy], provided that such actions are consistent with the objectives of the programme concerned. The rules of the Fund providing support shall apply.]

Article 12

Third countries associated to the Programme¹⁰

- [1. The Programme shall be open to association of the following third countries:
 - (a) European Free Trade Association (EFTA) members which are members of the European Economic Area (EEA), in accordance with the conditions laid down in the EEA agreement;

¹⁰ [This article is part of the MFF negotiating box and will therefore be modified based on horizontal orientation. It is understood that the association of EFTA members should be in accordance with the specific conditions laid down in agreements between the Union and those countries.]

- (b) acceding countries, candidate countries and potential candidates, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and Association Council decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Union and those countries;
- (c) countries covered by the European Neighbourhood Policy, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and Association Council decisions, or similar agreements, and in accordance with the specific conditions laid down in agreements between the Union and those countries;
- (d) third countries and territories that fulfil all of the following criteria:
 - i. a good capacity in science, technology and innovation;
 - ii. commitment to a rules-based open market economy, including fair and equitable dealing with intellectual property rights, backed by democratic institutions;
 - iii. active promotion of policies to improve the economic and social well-being of citizens.

Association to the Programme of each of the third countries under point(d) shall be in accordance with the conditions laid down in a specific agreement covering the participation of the third country to any Union programme, provided that the agreement:

- ensures a fair balance as regards the contributions and benefits of the third country participating in the Union programmes;
- lays down the conditions of participation in the programmes, including the calculation of financial contributions to individual programmes and their administrative costs. These contributions shall constitute assigned revenues in accordance with Article 21(5) of the Financial Regulation;

- does not confer to the third country a decisional power on the programme;
 - guarantees the rights of the Union to ensure sound financial management and to protect its financial interests.
2. The scope of association of each third country to the Programme shall take into account the objective of driving economic growth in the Union through innovation. Accordingly, with the exception of EEA members, acceding countries, candidate countries and potential candidates, parts of the Programme may be excluded from an association agreement for a specific country.
 3. The association agreement shall, where appropriate, provide for the participation of legal entities established in the Union in equivalent programmes of associated countries in accordance with the conditions laid down therein.
 4. The conditions determining the level of financial contribution shall ensure an automatic correction of any significant imbalance compared to the amount that entities established in the associated country receive through participation in the Programme, taking into account the costs in the management, execution and operation of the Programme.]

TITLE II

RULES FOR PARTICIPATION AND DISSEMINATION

CHAPTER I

General provisions

Article 13

Funding bodies and direct actions of JRC

1. Funding bodies may depart from the rules set out in this Title, except from Articles 14, 15 and 16, in duly justified cases and only if this is provided for in the basic act setting up the funding body or entrusting budget implementation tasks to it or, for funding bodies under Article 62(1)(c)(ii), (iii) or (v) of the Financial Regulation, if it is provided for in the contribution agreement and their specific operating needs or the nature of the action so require.
2. The rules set out in this Title shall not apply to direct actions undertaken by the JRC.

Article 14

Eligible actions

1. Without prejudice to paragraph 2 of this Article, only actions implementing the objectives referred to in Article 3 shall be eligible for funding.

The following fields of research shall not be financed:

- (a) activities aiming at human cloning for reproductive purposes;
 - (b) activities intended to modify the genetic heritage of human beings which could make such changes heritable¹¹;
 - (c) activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer.
2. Research on human stem cells, both adult and embryonic, may be financed, depending both on the contents of the scientific proposal and the legal framework of the Member States involved. No funding shall be granted, neither within nor outside the EU, for research activities that are prohibited in all the Member States. No activity shall be funded in a Member State where such activity is forbidden.

Article 15

Ethics¹²

1. Actions carried out under the Programme shall comply with ethical principles and relevant national, Union and international legislation, including the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights and its Supplementary Protocols.

Particular attention shall be paid to the principle of proportionality, the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination, the need to ensure high levels of human health protection as well as the protection of the environment.

¹¹ Research relating to cancer treatment of the gonads can be financed.

¹² Subject to the final legal act, the Commission will provide a declaration on human embryonic stem cell research as in H2020 (Declaration 2013 / C 373/02).

2. Entities participating in the action shall provide:
 - (a) an ethics self-assessment identifying and detailing all the foreseeable ethics issues related to the objective, implementation and likely impact of the activities to be funded, including a confirmation of compliance with paragraph 1, and a description of how it will be ensured;
 - (b) a confirmation that the activities will comply with the European Code of Conduct for Research Integrity published by All European Academies and that no activities excluded from funding will be conducted;
 - (c) for activities carried out outside the Union, a confirmation that the same activities would have been allowed in a Member State; and
 - (d) for activities making use of human embryonic stem cells, as appropriate, details of licensing and control measures that shall be taken by the competent authorities of the Member States concerned as well as details of the ethics approvals that shall be obtained before the activities concerned start.
3. Proposals shall be systematically screened to identify those actions raising complex or serious ethics issues and submit them to an ethics assessment. The ethics assessment shall be carried out by the Commission unless it is delegated to the funding body. For actions involving the use of human embryonic stem cells or human embryos, an ethics assessment shall be mandatory. Ethics screenings and assessments shall be carried out with the support of ethics experts. The Commission and the funding bodies shall ensure the transparency of the ethics procedures as much as possible.
4. Entities participating in the action shall obtain all approvals or other mandatory documents from the relevant national, local ethics committees or other bodies such as data protection authorities before the start of the relevant activities. Those documents shall be kept on file and provided to the Commission or funding body upon request.

5. If appropriate, ethics checks shall be carried out by the Commission or funding body. For serious or complex ethics issues, the checks shall be carried out by the Commission unless it is delegated to the funding body.

Ethics checks shall be carried out with the support of ethics experts.

6. Actions which do not fulfil the ethical requirements referred to in paragraph 1-4 may be rejected or terminated at any time.

Article 16

Security

1. Actions carried out under the Programme shall comply with the applicable security rules and in particular rules on protection of classified information against unauthorised disclosure, including compliance with any relevant national and Union law. In case of research carried out outside the Union using and/or generating classified information, it is necessary that, in addition to the compliance with those requirements, a security agreement shall have to be concluded between the Union and the third country in which the research is conducted.
2. Where appropriate, proposals shall include a security self-assessment identifying any security issues and detailing how these issues will be addressed in order to meet the relevant national and Union law.
3. Where appropriate, the Commission or funding body shall carry out a security scrutiny for proposals raising security issues.
4. Where appropriate, the actions shall comply with Decision (EU, Euratom) 2015/444, and its implementing rules.
5. Entities participating in the action shall ensure the protection against unauthorised disclosure of classified information used and/or generated by the action. They shall provide proof of personal and/or facility security clearance from the relevant national security authorities, prior to the start of the activities concerned.

6. If external experts have to deal with classified information, the appropriate security clearance shall be required before those experts are appointed.
7. Where appropriate, the Commission or funding body may carry out security checks.
8. Actions which do not comply with the security requirements referred to in paragraphs 1, 2, 4, 5 and 7 may be rejected or terminated at any time.

CHAPTER II

Grants

Article 17

Grants

Grants under the Programme shall be awarded and managed in accordance with Title VIII of the Financial Regulation, unless otherwise specified in this Chapter.

Article 18

Entities eligible for participation

1. Any legal entity, regardless of its place of establishment, or international organisation may participate in actions under the Programme, provided that the conditions laid down in this Regulation have been met together with any conditions laid down in the work programme or call.
2. Entities shall be part of a consortium that shall include at least three independent legal entities each established in a different Member State or associated country and with at least one of them established in a Member State, unless:
 - (a) the work programme provides otherwise, if duly justified;

- (b) the action is one referred to in paragraphs 3 or 4.
3. European Research Council (ERC) frontier research actions, European Innovation Council (EIC) actions, training and mobility actions or programme co-fund actions may be implemented by one or more legal entities, one of which must be established in a Member State or associated country.
 4. Coordination and support actions may be implemented by one or more legal entities, which may be established in a Member State, associated country [or in another third country]¹³.
 5. For actions related to Union strategic assets, interests, autonomy or security, the work programme may provide that the participation can be limited to those legal entities established in Member States only, or, to those legal entities established in specified associated [or other third countries] in addition to Member States. Any limitation of the participation of legal entities established in associated countries which are EEA members shall be in accordance with the terms and conditions of the EEA Agreement.
 6. Where appropriate and duly justified, the work programme may provide for eligibility criteria in addition to those set out in paragraphs 2, 3, 4, and 5 according to specific policy requirements or to the nature and objectives of the action, including the number of legal entities, the type of legal entity and the place of establishment.
 7. [For actions benefiting from amounts under Article 9(8), the participation shall be limited to a single legal entity established in the jurisdiction of the delegating Managing Authority, except if otherwise agreed with the Managing Authority and provided for in the work programme.]
 8. Where indicated in the work programme, the JRC may participate in actions.
 9. The JRC, international European research organisations and legal entities created under Union law shall be deemed to be established in a Member State other than the ones in which other legal entities participating in the action are established.

¹³ Brackets requested by MFF negotiators.

10. For European Research Council (ERC) frontier research actions and training and mobility actions, international organisations with headquarters in a Member State or associated country shall be deemed to be established in this Member State or associated country.

Article 19

Entities eligible for funding

1. Entities are eligible for funding if they are established in a Member State or associated country.

[For actions benefiting from amounts under Article 9(8), only entities established in the jurisdiction of the delegating Managing Authority shall be eligible for funding out of these amounts.]
2. [Entities established in a non-associated third country should in principle bear the cost of their participation. However, for low to middle income countries¹⁴ and exceptionally for other non-associated third countries they could be eligible for funding in an action if:
 - (a) the third country is identified in the work programme adopted by the Commission ; or
 - (b) the Commission or funding body consider that its participation is essential for implementing the action;]
3. Affiliated entities are eligible for funding in an action if they are established in a Member State, Associated country, [or in a third country] identified in the work programme adopted by the Commission.

¹⁴ A list of the low to middle income countries will be attached to the work programme.

Article 20

Calls for proposals

1. Notwithstanding the specific provisions in paragraph 2, the content of the calls for proposals for all actions shall be included in the work programme.
2. For the development of portfolios of actions under EIC Pathfinder transition activities:
 - (a) the launch and the content of the calls for proposals shall be determined with regard to objectives and budget established by the work programme in relation with the concerned portfolio of actions;
 - (b) Each proposal selected under the EIC Pathfinder through a call for proposals shall include a fixed amount of EUR 50,000 to carry out complementary activities, such as assessing possible spin-offs, potential market-creating innovations or developing a convincing business plan. The use of this amount will be subject to a prior authorisation by the Commission. The Programme Committee established under the Specific Programme shall be informed of such cases.
3. If necessary to achieve their objectives, calls may, in exceptional cases, be restricted to develop additional activities or to add additional partners to existing actions. In addition the work programme may foresee the possibility for legal entities from low R&I performing Member States to join already selected collaborative R&I actions, subject to the agreement of the respective consortium and provided that legal entities from such Member States are not yet participating in it.
4. A call for proposals is not required for coordination and support actions or programme co-fund actions which:
 - (a) are to be carried out by the JRC or legal entities identified in the work programme; and
 - (b) do not fall within the scope of a call for proposals, in accordance with Article 195(e) of the Financial Regulation.

5. The work programme shall specify calls for which "Seals of Excellence" will be awarded. With prior authorisation from the applicant, information concerning the application and the evaluation may be shared with interested financing authorities, subject to the conclusion of confidentiality agreements.

Article 21

Joint calls

The Commission or funding body may issue a joint call for proposals with:

- (a) third countries, including their scientific and technological organisations or agencies;
- (b) international organisations;
- (c) non-profit legal entities.

In the case of a joint call, joint procedures shall be established for selection and evaluation of proposals. The procedures shall involve a balanced group of experts appointed by each party.

Pre-commercial procurement and procurement of innovative solutions

1. Actions may involve or have as their primary aim pre-commercial procurement or public procurement of innovative solutions that shall be carried out by beneficiaries which are contracting authorities or contracting entities as defined in Directives 2014/23/EU¹⁵, 2014/24/EU¹⁶, 2014/25/EU¹⁷ and 2009/81/EC¹⁸.
2. The procurement procedures:
 - (a) shall comply with the principles of transparency, non- discrimination, equal treatment, sound financial management, proportionality and competition rules;
 - (b) for pre-commercial procurement, may provide for specific conditions such as the place of performance of the procured activities being limited to the territory of the Member States and of associated countries;
 - (c) may authorise the award of multiple contracts within the same procedure (multiple sourcing); and
 - (d) shall provide for the award of the contracts to the tender(s) offering best value for money while ensuring absence of conflict of interest.

¹⁵ Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (OJ L 94, 28.03.2014, p. 1).

¹⁶ Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. (OJ L 94, 28.03.2014, p. 65).

¹⁷ Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.03.2014, p. 243).

¹⁸ Directive 2009/81/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of procedures for the award of certain works contracts, supply contracts and service contracts by contracting authorities or entities in the fields of defence and security, and amending Directives 2004/17/EC and 2004/18/EC (OJ L 216, 20.08.2009, p.76).

3. The contractor generating results in pre-commercial procurement shall own at least the attached intellectual property rights. The contracting authorities shall enjoy at least royalty-free access rights to the results for their own use and the right to grant, or require the participating contractors to grant, non-exclusive licences to third parties to exploit the results for the contracting authority under fair and reasonable conditions without any right to sub-license. If a contractor fails to commercially exploit the results within a given period after the pre-commercial procurement as identified in the contract, the contracting authorities, after having discussed the issue with the contractor, can require it to transfer any ownership of the results to the contracting authorities.

¹⁹[Article 23

Cumulative funding

An action that has received a contribution from another Union programme may also receive a contribution under the Programme, provided that the contributions do not cover the same costs. The rules of each contributing Union programme shall apply to its respective contribution to the action. The cumulative funding shall not exceed the total eligible costs of the action and the support from different Union programmes may be calculated on a pro-rata basis in accordance with the documents setting out the conditions for support.]

Article 24

Selection criteria

1. In addition to the exceptions mentioned in Article 198(5) of the Financial Regulation, the financial capacity shall be verified only for the coordinator and only if the requested funding from the Union for the action is equal to or greater than EUR 500 000.

¹⁹ [Subject to the outcome of negotiations on the respective legal acts.]

2. However, if there are grounds to doubt the financial capacity or if there is a higher risk due to the participation in several ongoing actions funded by Union research and innovation programmes, the Commission or funding body shall verify also the financial capacity of other applicants or of coordinators below the threshold referred to in paragraph 1.
3. If the financial capacity is structurally guaranteed by another legal entity, the financial capacity of the latter shall be verified.
4. In case of weak financial capacity, the Commission or funding body may make participation of the applicant conditional on provision of a declaration on joint and several liability by an affiliated entity.
5. The contribution to the Mutual Insurance Mechanism set out in Article 33 shall be considered a sufficient guarantee under Article 152 of the Financial Regulation. No additional guarantee or security may be accepted from beneficiaries or imposed upon them.

Article 25

Award criteria

1. A proposal shall be evaluated on the basis of the following award criteria:
 - (a) excellence;
 - (b) impact;
 - (c) quality and efficiency of the implementation.
2. Only the criterion referred to in point (a) of paragraph 1 shall apply to proposals for ERC frontier research actions.
3. The work programme shall lay down further details of the application of the award criteria laid down in paragraph 1, and may specify weightings and thresholds.

Evaluation

1. Proposals shall be evaluated by the evaluation committee which shall be composed of external independent experts.

For EIC activities, missions and in duly justified cases as set out in the work programme **adopted by the Commission**, the evaluation committee may be composed partially or, in the case of coordination and support actions, partially or fully of representatives of Union Institutions or bodies as referred to in Article 150 of the Financial Regulation.

The evaluation process may be followed by independent observers.

2. Wherever applicable, the evaluation committee shall rank the proposals having passed the applicable thresholds, according to:
 - (a) the evaluation scores;
 - (b) their contribution to the achievement of specific policy objectives, including the constitution of a consistent portfolio of projects for EIC pathfinder activities, missions and in other duly justified cases as set out in the work programme **adopted by the Commission** in detail.

For EIC activities, missions and in other duly justified cases as set out in the work programme **adopted by the Commission** in detail, the evaluation committee may also propose adjustments to the proposals in as far as needed for the consistency of the portfolio approach. These adjustments shall be in conformity with the conditions for participation and comply with the principle of equal treatment. The Programme Committee shall be informed of such cases.

3. In accordance with Article 200 (7) of the Financial Regulation, applicants shall receive feedback at all stages of the evaluation and, where applicable, the reasons for rejection.
4. Legal entities established in low R&I performing Member States who have participated successfully in the component "Widening Participation and Sharing Excellence" shall receive, upon request, a record of this participation which may accompany proposals to Pillar II of the Programme which they coordinate.

Article 27

Evaluation review procedure

1. An applicant may request an evaluation review if it considers that the applicable evaluation procedure has not been correctly applied to its proposal²⁰.
2. An evaluation review applies only to the procedural aspects of the evaluation, not to the evaluation of the merits of the proposal.
- 2a. An evaluation review committee shall provide an opinion on the procedural aspects, and shall be chaired by an official of the Commission or of the relevant funding body, from a department other than that responsible for the call for proposals. The committee may recommend one of the following:
 - (a) re-evaluation of the proposal primarily by evaluators not involved in the previous evaluation;
 - (b) confirmation of the initial evaluation.
3. An evaluation review shall not delay the selection process for proposals that are not the subject of review.

²⁰ The procedure will be explained in a document published before the start of the evaluation process.

Article 28

Time to grant

1. By derogation from the first subparagraph of Article 194(2) of the Financial Regulation, the following periods shall apply:
 - (a) for informing all applicants of the outcome of the evaluation of their application, a maximum period of five months from the final date for submission of complete proposals;
 - (b) for signing grant agreements with applicants, a maximum period of eight months from the final date for submission of complete proposals.
2. The work programme may establish shorter periods.
3. In addition to the exceptions laid down in the second subparagraph of Article 194(2) of the Financial Regulation, the periods referred to in paragraph 1 may be exceeded for actions of the ERC, for missions and when actions are submitted to an ethics or security assessment.

Article 29

Implementation of the grant

1. If a beneficiary fails to comply with its obligations regarding the technical implementation of the action, the other beneficiaries shall comply with those obligations without any additional Union funding, unless they are expressly relieved of that obligation. The financial responsibility of each beneficiary shall be limited to its own debt subject to the provisions relating to the Mutual Insurance Mechanism.
2. The grant agreement may establish milestones and related pre-financing installments. If milestones are not met, the action may be suspended, amended or if duly justified, be terminated.

3. The action may also be terminated where expected results have lost their relevance for the Union due to scientific or technological reasons, or in the case of the EIC accelerator also due to economic reasons.

Article 29a

Model Grant Agreement

1. The Commission shall, in close cooperation with the Member States, draw up model grant agreements between the Commission or the relevant funding body and the beneficiaries in accordance with this Regulation. If a significant modification of a model grant agreement is required, the Commission shall, in close cooperation with the Member States, revise it as appropriate.
2. The grant agreement shall establish the rights and obligations of the beneficiaries and of either the Commission or the relevant funding body in compliance with this Regulation. It shall also establish the rights and obligations of legal entities which become beneficiaries during the implementation of the action, as well as the role and tasks of a consortium coordinator.

Article 30

Funding rates

1. A single funding rate per action shall apply for all activities it funds. The maximum rate shall be fixed in the work programme.
2. The Programme may reimburse up to 100 % of total eligible costs of an action, except for:
 - (a) innovation actions: up to 70 % of the total eligible costs, except for non-profit legal entities where the Programme may reimburse up to 100 % of the total eligible costs;
 - (b) programme co-fund actions: at least 30 % of the total eligible costs, and in identified and duly justified cases up to 70 %.

3. The funding rates determined in this Article shall also apply for actions where flat rate, unit or lump sum financing is fixed for the whole or part of the action.

Article 31

Indirect costs

1. Indirect eligible costs shall be determined by applying a flat rate of 25 % of the total direct eligible costs, excluding direct eligible costs for subcontracting, financial support to third parties and any unit costs or lump sums which include indirect costs.

Where appropriate, indirect costs included in unit costs or lump sums shall be calculated using the flat rate set out in paragraph 1, except for unit costs for internally invoiced goods and services which shall be calculated on the basis of actual costs, in accordance with the beneficiaries' usual costs accounting practices.

2. However, if provided for in the work programme, indirect costs may be declared in the form of a lump sum or unit costs.

Article 32

Eligible costs

1. In addition to the criteria set out in Article 186 of the Financial Regulation, for beneficiaries with project-based remuneration, costs of personnel are eligible up to the remuneration that the person would be paid for work in similar projects funded by national schemes including social security charges and other costs linked to the remuneration of personnel assigned to the action, arising from national law or from the employment contract.

Project-based remuneration means remuneration that is linked to the participation of a person in projects, is part of the beneficiary's usual remuneration practices and is paid in a consistent manner.

2. By derogation from Article 190(1) of the Financial Regulation, costs of resources made available by third parties by means of in-kind contributions shall be eligible, up to the direct eligible costs of the third party.
3. By derogation from Article 192 of the Financial Regulation, income generated by the exploitation of the results shall not be considered as receipts of the action.
4. By derogation from Article 203(4) of the Financial Regulation, a certificate on the financial statements shall be mandatory at payment of the balance, if the amount claimed as actual costs and unit costs calculated in accordance with usual cost accounting practices is equal to or greater than EUR 325 000.

Article 33

Mutual Insurance Mechanism

1. A Mutual Insurance Mechanism (the 'Mechanism') is hereby established which shall replace and succeed the fund set up in accordance with Article 38 of Regulation (EC) No 1290/2013. The Mechanism shall cover the risk associated with non-recovery of sums due by the beneficiaries:
 - (a) to the Commission under Decision No 1982/2006/EC,
 - (b) to the Commission and Union bodies under "Horizon 2020",
 - (c) to the Commission and funding bodies under the Programme.

The coverage of the risk regarding funding bodies referred to in point (c) of the first subparagraph may be implemented through an indirect coverage system set out in the applicable agreement and taking into account the nature of the funding body.

2. The Mechanism shall be managed by the Union, represented by the Commission acting as executive agent. The Commission shall set up specific rules for the operation of the Mechanism.

3. Beneficiaries shall make a contribution of 5 % of the Union funding for the action. On the basis of periodic evaluations, this contribution may be raised by the Commission up to 8% or may be reduced under 5%. The beneficiaries' contribution to the Mechanism shall be offset from the initial pre-financing and be paid to the Mechanism on behalf of the beneficiaries, and shall in no circumstance exceed the amount of the initial pre-financing.
4. The contribution of the beneficiaries shall be returned at the payment of the balance.
5. Any financial return generated by the Mechanism shall be added to the Mechanism. If the return is insufficient, the Mechanism shall not intervene and the Commission or funding body shall recover directly from beneficiaries or third parties any amount owed.
6. The amounts recovered shall constitute revenue assigned to the Mechanism within the meaning of Article 21(5) of the Financial Regulation. Once all grants whose risk is covered directly or indirectly by the Mechanism are completed, any sums outstanding shall be recovered by the Commission and entered into the budget of the Union, subject to decisions of the legislative authority.
7. The Mechanism may be opened to beneficiaries of any other directly managed Union programme. The Commission shall adopt modalities for participation of beneficiaries of other programmes.

Article 34

Ownership and protection

1. Beneficiaries shall own the results they generate. They shall ensure that any rights of their employees or any other parties in relation to the results can be exercised in a manner compatible with the beneficiaries' obligations in accordance with the terms and conditions laid down in the grant agreement.

Two or more beneficiaries shall own results jointly if:

- (a) they have jointly generated them; and

- (b) it is not possible to:
- (i) establish the respective contribution of each beneficiary,
- or
- (ii) separate them when applying for, obtaining or maintaining their protection.

The joint owners shall agree in writing on the allocation and terms of exercise of their joint ownership. Unless otherwise agreed, each joint owner may grant non-exclusive licences to third parties to exploit the jointly-owned results (without any right to sub-license), if the other joint owners are given advance notice and fair and reasonable compensation. The joint owners may agree in writing to apply another regime than joint ownership.

2. Beneficiaries having received Union funding shall adequately protect their results if protection is possible and justified, taking into account all relevant considerations, including the prospects for commercial exploitation. When deciding on protection, beneficiaries shall also consider the legitimate interests of the other beneficiaries in the action.

Article 35

Exploitation and dissemination

1. Beneficiaries having received Union funding shall use their best efforts to exploit their results, in particular in the Union and in the Associated Countries of the beneficiaries involved in the action. Exploitation may be done directly by the beneficiaries or indirectly in particular through the transfer and licensing of results in accordance with Article 36.

The work programme may provide for additional exploitation obligations.

If despite a beneficiary's best efforts to exploit its results directly or indirectly no exploitation takes place within a given period as identified in the grant agreement, the beneficiary shall use an appropriate online platform as identified in the grant agreement to find interested parties to exploit those results. If justified on the basis of a request of the beneficiary, this obligation may be waived.

2. Subject to any restrictions due to the protection of intellectual property, security rules or legitimate interests, beneficiaries shall disseminate their results as soon as possible.

The work programme may provide for additional dissemination obligations.

3. Beneficiaries shall ensure that open access to scientific publications applies under the terms and conditions laid down in the grant agreement. In particular, the beneficiaries shall ensure that they or the authors retain sufficient intellectual property rights to comply with their open access requirements.

Open access to research data shall be the general rule under the terms and conditions laid down in the grant agreement, but exceptions shall apply if justified, taking into consideration the legitimate interests of the beneficiaries including commercial exploitation and any other constraints, such as data protection rules, security rules or intellectual property rights.

The work programme may provide for additional obligations to adhere to open science practices.

4. Beneficiaries shall manage all research data in line with the FAIR principles and in accordance with the terms and conditions laid down in the grant agreement and shall establish a Data Management Plan.

The work programme may provide for additional obligations to use the European Open Science Cloud (EOSC) for storing and giving access to research data.

5. Beneficiaries that intend to disseminate their results shall give advance notice to the other beneficiaries in the action. Any other beneficiary may object if it can show that the intended dissemination would significantly harm its legitimate interests in relation to its results or background. In such cases, the dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests.

6. Unless the work programme provides otherwise, proposals shall include a plan for the exploitation and dissemination of the results. If the expected exploitation entails developing, creating, manufacturing and marketing a product or process, or in creating and providing a service, the plan shall include a strategy for such exploitation. If the plan provides for exploitation primarily in non-associated third countries, the legal entities shall explain how that exploitation is still in the Union interest.

The beneficiaries shall further develop the plan during and after the end of the action.

7. For the purposes of monitoring and dissemination by the Commission or funding body, the beneficiaries shall provide any requested information regarding the exploitation and dissemination of their results, in accordance with the conditions laid down in the grant agreement. Subject to the legitimate interests of the beneficiaries, such information shall be made publicly available.

Article 36

Transfer and licensing

1. Beneficiaries may transfer ownership of their results. They shall ensure that their obligations also apply to the new owner and that the latter has the obligation to pass them on in any subsequent transfer.
2. Unless agreed otherwise in writing for specifically-identified third parties or unless impossible under applicable law, beneficiaries that intend to transfer ownership of results shall give advance notice to any other beneficiary that still has access rights to the results. The notification must include sufficient information on the new owner to enable a beneficiary to assess the effects on its access rights.

Unless agreed otherwise in writing for specifically-identified third parties, a beneficiary may object to the transfer if it can show that the transfer would adversely affect its access rights. In this case, the transfer may not take place until agreement has been reached between the beneficiaries concerned.

3. Beneficiaries may grant licences to their results or otherwise give the right to exploit them, including on an exclusive basis, if this does not affect compliance with their obligations. Exclusive licences for results may be granted subject to consent by all the other beneficiaries concerned that they will waive their access rights thereto.
4. Where this is justified, the grant agreement shall lay down the right to object to transfers of ownership of results, or to grants of an exclusive licence regarding results, if:
 - (a) the beneficiaries generating the results have received Union funding;
 - (b) the transfer or licence is to a legal entity established in a non-associated third country; and
 - (c) the transfer or licence is not in line with Union interests.

If the right to object applies, the beneficiary shall give advance notice. The right to object may be waived in writing regarding transfers or grants to specifically identified legal entities if measures safeguarding Union interests are in place.

Article 37

Access rights

1. The following access rights principles shall apply:
 - (a) a request to exercise access rights or any waiving of access rights shall be made in writing;
 - (b) unless otherwise agreed with the grantor, access rights do not include the right to sub-license;
 - (c) the beneficiaries shall inform each other before their accession to the grant agreement of any restrictions to granting access to their background;
 - (d) if a beneficiary is no longer involved in an action, it shall not affect its obligations to grant access;

(e) if a beneficiary defaults on its obligations, the beneficiaries may agree that it no longer has access rights.

2. Beneficiaries shall grant access to:

(a) their results on a royalty-free basis to any other beneficiary in the action that needs it to implement its own tasks;

(b) their background to any other beneficiary in the action that needs it to implement its own tasks, subject to any restrictions referred to in paragraph 1(c); that access shall be granted on a royalty-free basis, unless otherwise agreed by the beneficiaries before their accession to the grant agreement;

(c) their results and, subject to any restrictions referred to in paragraph 1(c), to their background to any other beneficiary in the action that needs it to exploit its own results; that access shall be granted under fair and reasonable conditions to be agreed upon.

3. Unless otherwise agreed by the beneficiaries, they shall also grant access to their results and, subject to any restrictions referred to in paragraph 1(c), to their background to a legal entity that:

(a) is established in a Member State or associated country;

(b) is under the direct or indirect control of another beneficiary, or is under the same direct or indirect control as that beneficiary, or is directly or indirectly controlling that beneficiary; and

(c) needs the access to exploit the results of that beneficiary, in accordance with the beneficiary's exploitation obligation.

Access shall be granted under fair and reasonable conditions to be agreed upon.

4. A request for access for exploitation purposes may be made up to one year after the end of the action, unless the beneficiaries agree on a different time-limit.

5. Beneficiaries having received Union funding shall grant access to their results on a royalty-free basis to the Union institutions, bodies, offices or agencies for developing, implementing and monitoring Union policies or programmes. Access shall be limited to non-commercial and non-competitive use.

In actions under the cluster 'Civil security for Society', beneficiaries having received Union funding shall also grant access to their results on a royalty-free basis to Member States' national authorities, for developing, implementing and monitoring their policies or programmes in that area. Access shall be limited to non-commercial and non-competitive use and shall be granted upon bilateral agreement defining specific conditions aimed at ensuring that those rights will be used only for the intended purpose and that appropriate confidentiality obligations will be in place. The requesting Member State, Union institution, body, office or agency shall notify all Member States of such requests.

6. The work programme may provide for additional access rights.

Article 38

Specific provisions on exploitation and dissemination

Specific rules on ownership, exploitation and dissemination, transfer and licensing as well as access rights may apply for ERC actions, training and mobility actions, pre-commercial procurement actions, public procurement of innovative solutions actions, programme co-fund actions and coordination and support actions.

These specific rules shall be set out in the grant agreement and shall not change the obligations on open access.

CHAPTER III

Prizes

Article 39

Prizes

1. Prizes under the Programme shall be awarded and managed in accordance with Title IX of the Financial Regulation, unless otherwise specified in this Chapter.
2. Any legal entity, regardless of its place of establishment, may participate in a contest, unless otherwise provided in the work programme or rules of contests.
3. The Commission or funding body may organise prizes with:
 - (a) other Union bodies;
 - (b) third countries, including their scientific and technological organisations or agencies;
 - (c) international organisations; or
 - (d) non-profit legal entities.
4. The work programme or rules of contest may include obligations regarding communication, exploitation and dissemination.

CHAPTER IV

Procurement

Article 40

Procurement

1. Procurement under the Programme shall be awarded and managed in accordance with Title VII of the Financial Regulation, unless otherwise specified in this Chapter.
2. Procurement may also take the form of pre-commercial procurement or procurement of innovative solutions carried out by the Commission or the funding body on its own behalf or jointly with contracting authorities from Member States and associated countries. In this case, the rules set out in Article 22 shall apply.

CHAPTER V

Blending operations and blended finance

Article 41

Blending operations

Blending operations decided under this Programme shall be implemented in accordance with the InvestEU Programme and Title X of the Financial Regulation.

Article 42

Horizon Europe and EIC Blended finance

1. The grant and reimbursable advance components of Horizon Europe or EIC blended finance shall be subject to Articles 30 to 33.

2. EIC blended finance shall be implemented in accordance with Article 43. The support under the EIC blended finance may be granted until the action can be financed as a blending operation or as a financing and investment operation fully covered by the EU guarantee under InvestEU. By derogation from Article 209 of the Financial Regulation, the conditions laid down in paragraph (2) and, in particular, paragraph (a) and (d), do not apply at the time of the award of EIC blended finance.
3. Horizon Europe blended finance may be awarded to a programme co-fund where a joint programme of Member States and associated countries provides for the deployment of financial instruments in support of selected actions. The evaluation and selection of such actions shall be made in accordance with Articles 19, 20, 23, 24, 25 and 26. The implementation modalities of the Horizon Europe blended finance shall comply with Article 29, by analogy Article 43(9) and with additional conditions defined by the work programme.
4. Repayments including reimbursed advances and revenues of Horizon Europe and EIC blended finance shall be considered as internal assigned revenues in accordance with Articles 21(3)(f) and 21(4) of Financial Regulation.
5. Horizon Europe and EIC blended finance shall be provided in a manner that does not distort competition in the internal market.

Article 43

EIC's Accelerator

1. While EIC pathfinder will provide grants to projects implemented by consortia or monobeneficiaries, the EIC's Accelerator shall mainly provide blended finance support only for monobeneficiaries. Under certain conditions, detailed in decision (specific programme), it may also provide grant-only and equity-only supports.

Grant only support under the EIC Accelerator shall only be provided under the following cumulative conditions:

- a) the project shall include information on the capacities and willingness of the applicant to scale-up;
- b) the beneficiary can only be a start-up or an SME;
- c) a grant-only support under the EIC Accelerator can only be provided once to a beneficiary during Horizon Europe for a maximum of EUR 2.5 million.

Equity-only support can only be provided to a beneficiary of a grant-only support.

- 1a. The beneficiary of the EIC Accelerator shall be a legal entity qualifying as a start-up, an SME or in exceptional cases as a small mid-cap²¹, established in a Member State or associated country. The proposal may be submitted either by the beneficiary, or, subject to the prior agreement by the beneficiary, by one or more natural persons or legal entities intending to establish or support that beneficiary. In the latter case, the funding agreement will be signed with the beneficiary only.
2. A single award decision shall cover and provide funding for all forms of Union contribution provided under EIC blended finance.
3. Proposals shall be evaluated on their individual merit by external independent experts and selected in the context of a continuously open call with cut-off dates, based on Articles 24 to 26, subject to paragraph 4.

²¹ As defined in Article 2.

4. Award criteria shall be:
 - (a) excellence;
 - (b) impact;
 - (c) the level of risk of the action that would prevent investments, the quality and efficiency of the implementation, and the need for Union support.

5. With the agreement of applicants concerned, the Commission or funding bodies implementing Horizon Europe may directly submit for evaluation under the last evaluation criterion a proposal for an innovation and market deployment action which already fulfils the first two criteria, subject to the following cumulative conditions:
 - (a) the proposal shall stem from any other action funded by Horizon 2020, from this Programme; or, subject to a pilot in the first Horizon Europe work programme, from national and/or regional programmes, starting with the mapping of the demand for such a scheme. Detailed provisions shall be laid down in the Specific Programme.
 - (b) be based on a previous project review not longer than 2 years ago assessing the excellence and the impact of the proposal and subject to conditions and processes further detailed in the work programme.

6. A Seal of Excellence may be awarded subject to the following cumulative conditions:
 - (a) the beneficiary is a start-up, an SME or a small mid-cap,
 - (b) the proposal was eligible and has passed applicable thresholds for the first two award criteria referred to in paragraph 4,
 - (c) for those activities that would be eligible under an innovation action.

7. For a proposal having passed the evaluation, external independent experts shall propose a corresponding EIC Accelerator support, based on the risk incurred and the resources and time necessary to bring and deploy the innovation to the market.

The Commission may reject a proposal retained by external independent experts for justified reasons, including compliance with the objectives of Union policies. The Programme Committee shall be informed of the reasons for such rejections.

8. The grant or the reimbursable advance component of the EIC Accelerator support shall not exceed 70% of the total eligible costs of the selected innovation action.
9. Implementation modalities of the equity and repayable support components of the EIC Accelerator support shall be detailed in Decision [Specific programme].
10. The contract for the selected action shall establish specific milestones and the corresponding pre-financing and payments by instalments of the EIC Accelerator support.

In the case of EIC blended finance, activities corresponding to an innovation action may be launched and first pre-financing of the grant or the reimbursable advance paid, prior to the implementation of other components of the awarded EIC blended finance. The implementation of those components shall be subject to the achievement of specific milestones established in the contract.

11. In accordance with the contract, the action shall be suspended, amended or if duly justified be terminated if milestones are not met. It may also be terminated where the expected market deployment cannot be met.

In exceptional cases and upon advice by the EIC board, the Commission may decide to increase the EIC Accelerator support subject to a project review by external independent experts. The Programme Committee shall be informed of such cases.

Chapter VI

Experts

Article 44

Appointment of external independent experts

1. External independent experts shall be identified and selected on the basis of calls for applications from individuals and calls addressed to relevant organisations such as research agencies, research institutions, universities, standardisation organisations, civil society organisations or enterprises with a view to establishing a database of candidates. By derogation from Article 237(3) of the Financial Regulation, the Commission or the relevant funding body may, if deemed appropriate and in duly justified cases, select in a transparent manner any individual expert with the appropriate skills not included in the database.
2. In accordance with Article 237(2) and 237(3) of the Financial Regulation, external independent experts shall be remunerated based on standard conditions. If justified, an appropriate level of remuneration beyond the standard conditions based on relevant market standards, especially for specific high level experts, may be granted.
3. In addition to paragraphs 2 and 3 of Article 38 of the Financial Regulation, the names of external independent experts evaluating grant applications, who are appointed in a personal capacity shall be published, together with their area of expertise, at least once a year on the internet site of the Commission or the funding body. Such information shall be collected, processed and published in accordance with the EU data protection rules.
4. When appointing external independent experts, the Commission or the relevant funding body shall take appropriate measures to seek a balanced composition within the expert groups and evaluation panels in terms of skills, experience, knowledge, including in the field of SSH, geographical diversity and gender, taking into account the situation in the field of the action.

TITLE III

PROGRAMME MONITORING, COMMUNICATION, EVALUATION AND CONTROL

Article 45

Monitoring and reporting

1. Indicators to report on progress of the Programme towards the achievement of the objectives established in Article 3 are set in Annex V along impact pathways.
2. The Commission is empowered to adopt delegated acts in accordance with Article 50 concerning amendments to Annex V to supplement or amend the impact pathway indicators, where considered necessary, and set baselines and targets.
3. The performance reporting system shall ensure that data for monitoring programme implementation and results are collected efficiently, effectively and in a timely manner. To that end, proportionate reporting requirements shall be imposed on recipients of Union funds and (where relevant) Member States²².
4. The measures aimed at facilitating collaborative links in European research and innovation shall be monitored and reviewed within the context of the work programmes.

Article 46

Information, communication, publicity and dissemination and exploitation

1. The recipients of Union funding shall acknowledge the origin and ensure the visibility of the Union funding (in particular when promoting the actions and their results) by providing coherent, effective and proportionate targeted information to multiple audiences, including the media and the public.

²² Provisions for the monitoring of the European Partnerships are set out in the Annex III of the Regulation.

2. The Commission shall implement information and communication actions relating to the Programme, and its actions and results. Evidence-based matchmaking services informed by analytics and network affinities shall be provided to interested entities in order to form consortia for collaborative projects, with particular attention to identifying networking opportunities for legal entities from low R&I performing Member States. On the basis of such analysis, targeted match-making events may be organised in function of specific calls for proposals. Financial resources allocated to the Programme shall also contribute to the corporate communication of the political priorities of the Union, as far as they are related to the objectives referred to in Article 3.
3. The Commission shall also establish a dissemination and exploitation strategy for increasing the availability and diffusion of the Programme's research and innovation results and knowledge to accelerate exploitation towards market uptake and boost the impact of the Programme. Financial resources allocated to the Programme shall also contribute to the corporate communication of the political priorities of the Union as well as information, communication, publicity, dissemination and exploitation activities as far as they are related to the objectives referred to in Article 3.

Article 47

Programme evaluation

1. Programme evaluations shall be carried out in a timely manner to feed into the decision-making process on the programme, its successor and other initiatives relevant to research and innovation.
2. The interim evaluation of the Programme shall be carried out with the assistance of independent experts selected on the basis of a transparent process once there is sufficient information available about the implementation of the Programme, but no later than four years after the start of the programme implementation. It shall include an assessment of the long-term impact of previous Framework Programmes and shall form the basis to adjust programme implementation, as appropriate.

3. At the end of the implementation of the Programme, but no later than four years after the end of the period specified in Article 1, a final evaluation of the Programme shall be completed by the Commission. It shall include an assessment of the long-term impact of previous Framework Programmes.
4. The Commission shall communicate the conclusions of the evaluations accompanied by its observations, to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions.

Article 48

Audits

1. The control system for the Programme shall ensure an appropriate balance between trust and control, taking into account administrative and other costs of controls at all levels, especially for beneficiaries.
2. The audit strategy for the Programme shall be based on the financial audit of a representative sample of expenditure across the Programme as a whole. The representative sample shall be complemented by a selection based on an assessment of the risks related to expenditure. Actions that receive joint funding from different Union programmes shall be audited only once, covering all involved programmes and their respective applicable rules.

3. In addition, the Commission or funding body may rely on combined systems reviews at beneficiary level. These combined reviews shall be optional for certain types of beneficiaries and shall consist in a systems and process audit, complemented by an audit of transactions, carried out by a competent independent auditor qualified to carry out statutory audits of accounting documents in accordance with Directive 2006/43/EC²³. They may be used by the Commission or funding body to determine overall assurance on the sound financial management of expenditure and for reconsideration of the level of ex-post audits and certificates on financial statements.
4. In accordance with Article 127 of the Financial Regulation, the Commission or funding body may rely on audits on the use of Union contributions carried out by other persons or entities, including by other than those mandated by the Union Institutions or bodies.
5. Audits may be carried out up to two years after the payment of the balance.

Article 49

Protection of financial interests of the Union

1. The Commission or its representatives, and the Court of Auditors, shall have the power of audit or, in the case of international organisations, the power of verification in accordance with agreements reached with them, on the basis of documents and on-the-spot, over all grant beneficiaries, contractors and subcontractors who have received Union funds under this Regulation.

²³ Directive 2006/43/EC of the European Parliament and of the Council of 17 May 2006 on statutory audits of annual accounts and consolidated accounts, amending Council Directive 78/660/EEC and 83/349/EEC and repealing Council Directive 84/253/EEC (OJ L 157, 9.6.2006, p. 87)

2. The European Anti-Fraud Office (OLAF) may carry out administrative investigations, including on-the-spot checks and inspections, in accordance with the provisions and procedures laid down in Regulation (EU, Euratom) No 883/2013 of the European Parliament and of the Council and Council Regulation (Euratom, EC) No 2185/96, with a view to establishing whether there has been fraud, corruption or any other illegal activity affecting the financial interests of the Union in connection with Union funding or budgetary guarantees under this Regulation.
3. Competent authorities of third countries and international organisations may also be required to cooperate with the European Public Prosecutor's Office (EPPO), in accordance with Mutual Legal Assistance Agreements, when it carries out investigations into criminal offences falling within its competence in accordance with Regulation (EU) 2017/1939.
4. Without prejudice to paragraphs 1 and 2, cooperation agreements with third countries and with international organisations, contracts, grant agreements and other legal commitments, as well as agreements establishing a budgetary guarantee, resulting from the implementation of this Regulation shall contain provisions expressly empowering the Commission, the Court of Auditors and OLAF to conduct such audits, on-the-spot checks and inspections, according to their respective competences. This shall include provisions to ensure that any third parties involved in the implementation of Union funds or of a financing operation supported, in whole or in part, by a budgetary guarantee grant equivalent rights.

Article 50

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Article 45(2) shall be conferred on the Commission until 31 December 2028.

3. The delegation of power referred to in Article 45(2) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal* of the European Union or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.
6. A delegated act adopted pursuant to Article 45(2) shall enter into force if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

TITLE IV

TRANSITIONAL AND FINAL PROVISIONS

Article 51

Repeal

Regulation (EU) No 1291/2013 and Regulation (EU) No 1290/2013 are repealed with effect from 1 January 2021.

Article 52

Transitional provisions

1. This Regulation shall not affect the continuation or modification of the actions concerned, under Regulation (EU) No 1291/2013 and Regulation (EU) No 1290/2013, which shall continue to apply to those actions until their closure. Work plans and actions provided for in work plans adopted under Regulation (EU) No 1290/2013 and under the corresponding funding bodies' basic acts shall also continue to be governed by Regulation (EU) No 1290/2013 and those basic acts until their completion.
2. The financial envelope for the Programme may also cover technical and administrative assistance expenses necessary to ensure the transition between the Programme and the measures adopted under its predecessor Regulation (EU) No 1291/2013.

Article 53

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the European Parliament

For the Council

The President

The President

ANNEX I

BROAD LINES OF ACTIVITIES

The general and specific objectives set out in Article 3 shall be pursued across the Programme, through the areas of intervention and the broad lines of activity described in this Annex, as well as in Annex I to the Specific Programme.

(1) Pillar I 'Excellent Science'

Through the following activities, this pillar shall, in line with Article 4, promote scientific excellence, attract the best talent to Europe, provide appropriate support to early stage researchers and support the creation and diffusion of scientific excellence, high-quality knowledge, methodologies and skills, technologies and solutions to global social, environmental and economic challenges. It shall also contribute to the other Programme's specific objectives as described in Article 3.

- (a) European Research Council: Providing attractive and flexible funding to enable talented and creative individual researchers and their teams to pursue the most promising avenues at the frontier of science, regardless of their nationality and country of origin and on the basis of competition based solely on the criterion of excellence.

Area of intervention: Frontier science

- (b) Marie Skłodowska-Curie Actions: Equipping researchers with new knowledge and skills through mobility and exposure across borders, sectors and disciplines, enhancing training and career development systems as well as structuring and improving institutional and national recruitment, taking into account the European Charter for Researchers and Code of Conduct for the recruitment of researchers; in so doing, the Marie Skłodowska-Curie Actions help to lay the foundations of Europe's excellent research landscape, where relevant contributing to boosting jobs, growth, and investment, and solving current and future societal challenges.

Areas of intervention: Nurturing excellence through mobility of researchers across borders, sectors and disciplines; fostering new skills through excellent training of researchers; strengthening human resources and skills development across the European Research Area, including, if appropriate and justified by a study, support for researchers to return to their country of origin within and to the Union; improving and facilitating synergies; promoting public outreach.

- (c) **Research Infrastructures:** Endowing Europe with world-class sustainable research infrastructures which are open, and accessible to the best researchers from Europe and beyond. Encouraging the use of existing research infrastructures, including those financed from ESIF. In so doing the potential of the research infrastructure to support scientific advance and innovation, and to enable open and excellent science, following the FAIR principles, will be enhanced, alongside activities in related Union policy and international cooperation.

Areas of intervention: Consolidating and developing the landscape of European research infrastructures; Opening, integrating and interconnecting research infrastructures; Reinforcing European research infrastructure policy and international cooperation; enhancing European research infrastructures' role and activities for innovation and training.

(2) Pillar II 'Global Challenges and European Industrial Competitiveness'

Through the following activities, this pillar shall, in line with Article 4, support the creation and better diffusion of high-quality new knowledge, technologies and sustainable solutions, reinforce the competitiveness of European industry, strengthen the impact of research and innovation in developing, supporting and implementing Union policies, and support the uptake of innovative solutions in industry, notably in SMEs and start-ups, and society to address global challenges. It shall also contribute to the other Programme's specific objectives as described in Article 3.

SSH shall be fully integrated across all clusters, including specific and dedicated activities.

To maximise impact flexibility and synergies, research and innovation activities shall be organised in six clusters, which individually and together will incentivise interdisciplinary, cross-sectoral, cross-policy, cross-border and international cooperation. Synergies and synchronization between the clusters especially on ‘Climate and Energy’ and ‘Mobility’ shall be ensured through appropriate coordination between the clusters when drawing-up the Work Programmes and through the relevant Programme Committee configurations. Activities from a broad range of TRLs, including lower TRLs will be covered in this pillar of Horizon Europe.

Each cluster contributes towards several SDGs; and many SDGs are supported by more than one cluster.

The R&I activities shall be implemented in and across the following clusters:

- (a) Cluster 'Health': Improving and protecting the health and well-being of citizens at all ages, by generating new knowledge, developing innovative solutions, and ensuring to integrate where relevant a gender perspective to prevent, diagnose, monitor, treat and cure diseases; mitigating health risks, protecting populations and promoting good health and well-being, also in the work place; making public health systems more cost-effective, equitable and sustainable; preventing poverty-related diseases; and supporting and enabling patients' participation and self-management.

Areas of intervention: Health throughout the life course; Environmental and social health determinants; Non-communicable and rare diseases; Infectious diseases, including poverty-related and neglected diseases; Tools, technologies and digital solutions for health and care, including personalised medicine; Health care systems.

- (b) Cluster 'Culture and Inclusive Society': Strengthening democratic values, including rule of law and fundamental rights, safeguarding our cultural heritage, and promoting socio-economic transformations that contribute to inclusion and growth, including migration management and integration of migrants.

Areas of intervention: Governance and democracy; Cultural heritage; Social and economic transformations.

- (c) Cluster 'Civil Security for Society': Responding to the challenges arising from persistent security threats, including cybercrime, as well as natural and man-made disasters.

Areas of intervention: Disaster-resilient societies; Protection and security; Cybersecurity.

- (d) Cluster 'Digital, Industry and Space': Reinforcing capacities and securing Europe's sovereignty in key enabling technologies for digitisation and production, and in space technology, all along the value chain, to build a competitive, digital, low-carbon and circular industry; ensure a sustainable supply of raw materials; develop advanced materials and provide the basis for advances and innovation in global societal challenges.

Areas of intervention: Manufacturing technologies; Key digital technologies; Emerging enabling technologies; Advanced materials; Artificial intelligence and robotics; Next generation internet; Advanced computing and Big Data; Circular industries; Low carbon and clean industries; Space, including earth observation.

- (e) Cluster 'Climate and Energy': Fighting climate change by better understanding its causes, evolution, risks, impacts and opportunities, by making the energy sector more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient, by improving resilience of the Union to external shocks and by adapting social behaviour in view of the SDGs.

Areas of intervention: Climate science and solutions; Energy supply; Energy systems and grids; Buildings and industrial facilities in energy transition; Communities and cities; Industrial competitiveness in transport; Energy storage.

- (ee) Cluster 'Mobility': Making the transport sector, including vehicles, more climate and environment-friendly, more efficient and competitive, smarter, safer and more resilient.

Areas of intervention: Industrial Competitiveness in Transport; Clean, safe and accessible transport and mobility; Smart mobility;

- (f) Cluster 'Bioeconomy, Food, Natural Resources and Environment': Protecting the environment, restoring, sustainably managing and using natural and biological resources from land and sea to stop biodiversity erosion, to address food and nutrition security for all and the transition to a low carbon, resource efficient and circular economy and sustainable bioeconomy.

Areas of intervention: Environmental observation; Biodiversity and natural resources; Agriculture, forestry and rural areas; seas, oceans and inland waters; Food systems; Bio-based innovation systems in the EU bioeconomy; Circular systems.

- (g) Non-nuclear direct actions of the Joint Research Centre: Generating high-quality scientific evidence for efficient and affordable good public policies. New initiatives and proposals for EU legislation need transparent, comprehensive and balanced evidence to be sensibly designed, whereas implementation of policies needs evidence to be measured and monitored. The JRC will provide Union policies with independent scientific evidence and technical support throughout the policy cycle. The JRC will focus its research on EU policy priorities.

Areas of intervention: Health; inclusion, creativity and culture, civil security for society; digital and industry; climate, energy and mobility; bioeconomy, food, natural resources and environment; support to the functioning of the internal market and the economic governance of the Union; support to Member States with implementation of legislation and development of smart specialisation strategies; analytical tools and methods for policy making; knowledge management; knowledge and technology transfer; support to science for policy platforms.

(3) Pillar III 'Innovative Europe'

Through the following activities, this pillar shall, in line with Article 4, foster all forms of innovation, primarily within SMEs, by facilitating technological development, demonstration and knowledge transfer, and strengthen deployment of innovative solutions . It shall also contribute to the Programme's other specific objectives as described in Article 3. The EIC will be implemented primarily through two types of actions: the Pathfinder, implemented mainly through collaborative research, and the Accelerator.

- (a) European Innovation Council: promoting all kinds of innovation with a strong focus on breakthrough and disruptive innovation with scale-up potential at EU and international level.

Areas of intervention: Pathfinder, supporting future and emerging breakthrough, market-creating and/or deep tech technologies; Accelerator, bridging the financing gap between late stages of research and innovation activities and market take-up, to effectively deploy breakthrough, market-creating innovation and scale up companies where the market does not provide viable financing; additional activities such as prizes and fellowships, and business added-value services.

- (b) European innovation ecosystems

Areas of intervention: Connecting, where relevant in cooperation with the EIT, with national and regional innovation actors and supporting the implementation of joint cross-border innovation programmes by Member States, Regions and associated countries, from the exchange of practice and knowledge on innovation regulation to the enhancement of soft skills for innovation to research and innovation actions, including open or user-led innovation, to boost the effectiveness of the European innovation system. This should be implemented in synergy inter alia with the ERDF support for innovation eco-systems and interregional partnerships around smart specialisation topics.

- (c) The European Institute of Innovation and Technology

[Areas of intervention: Strengthen and extend sustainable innovation ecosystems across Europe; Fostering the development of entrepreneurial and innovation skills in a lifelong learning perspective and support the entrepreneurial transformation of EU universities; Bring new solutions to global societal challenges to the market; Synergies and value added within Horizon Europe; interlink with the EIC's large-scale and high-risk support to promising innovators, by supporting start-ups and scale-ups.].

4) Part 'Widening participation and strengthening the European Research Area'

Through the following activities, this part of the Programme shall, in line with Article 4, optimise the Programme's delivery for widening participation and strengthening the European Research Area. It shall aim to strengthen collaborative links across Europe and open up European R&I networks, as well as exploit the potential of the Union's talent pool. In addition it shall contribute to improve visibility of science in society. It shall support the Programme's specific objectives as described in Article 3, including specific measures for increased participation of low R&I performing Member States. While underpinning the entire Programme, this part will support activities that contribute to attracting talent, fostering brain circulation and preventing brain drain, a more knowledge-based and innovative and gender-equal Europe, at the front edge of global competition, fostering transnational cooperation and thereby optimising national strengths and potential across Europe in a well-performing European Research Area (ERA), where knowledge and a highly skilled workforce circulate freely, where the outcomes of R&I are widely disseminated to as well as understood and trusted by informed citizens and benefit society as a whole, and where EU policy, notably R&I policy, is based on high quality scientific evidence.

It shall also support activities aimed at improving the quality of proposals from legal entities from low R&I performing Member States, such as professional pre-proposal checks and advice, and boosting the activities of National Contact Points to support international networking, as well as activities aimed at supporting legal entities from low R&I performing Member States joining already selected collaborative projects in which legal entities from such Member States are not participating.

Areas of intervention: Widening participation and sharing excellence, through Teaming, Twinning, ERA-Chairs, COST and activities to foster brain circulation; Reforming and enhancing the European R&I system, for example by supporting national research and innovation policy reform, providing attractive career environments, and supporting gender and citizen science.

ANNEX Ia

EUROPEAN INSTITUTE OF INNOVATION AND TECHNOLOGY (EIT)

The following shall apply in the implementation of the programme activities of the EIT:

[1. Rationale

As the report of the High Level Group on maximising the impact of EU research and innovation (the Lamy High Level Group) clearly states, the way forward is 'to educate for the future and invest in people who will make the change'. In particular, European universities are called to stimulate entrepreneurship, tear down disciplinary borders and institutionalise strong non-disciplinary academia-industry collaborations. According to recent surveys, access to talented people is by far the most important factor influencing the location choices of European founders of start-ups. Entrepreneurship education and training opportunities play a key role in cultivating future innovators and in developing the abilities of existing ones to grow their business to greater levels of success. Access to entrepreneurial talent, together with access to professional services, capital and markets on the EU level, and bringing key innovation actors together around a common goal are key ingredients for nurturing an innovation ecosystem. There is a need to coordinate efforts across the EU in order to create a critical mass of interconnected EU-wide entrepreneurial clusters and ecosystems,

Efforts are still needed to develop ecosystems where researchers, innovators, industries and governments can easily interact. Innovation ecosystems, in fact, still do not work optimally due to a number of reasons such as:

- Interaction among innovation players is still hampered by organizational, regulatory and cultural barriers between them;
- Efforts to strengthen innovation systems lack coordination and a clear focus on specific objectives and impact.

To address future challenges, embrace the opportunities of new technologies and contribute to sustainable economic growth, jobs, competitiveness and the well-being of Europe's citizens, there is the need to further strengthen Europe's capacity to innovate by: fostering the creation of new environments conducive to collaboration and innovation; strengthening the innovation capabilities of academia and the research sector; supporting a new generation of entrepreneurial people; stimulating the creation and the development of innovative ventures.

The nature and scale of the innovation challenges require liaising and mobilising players and resources at European scale, by fostering cross-border collaboration. There is a need to break down silos between disciplines and along value chains and nurture the establishment of a favorable environment for an effective exchange of knowledge and expertise, and for the development and attraction of entrepreneurial talents.

2. Areas of Intervention

2.1. *Sustainable innovation ecosystems across Europe*

In accordance with the EIT regulation and the Strategic Innovation Agenda, the EIT will play a reinforced role in strengthening sustainable innovation ecosystems across Europe. In particular, the EIT will continue to operate primarily through its Knowledge and Innovation Communities (KICs), the large-scale European partnerships that address specific societal challenges. It will continue to strengthen innovation ecosystems around them, by opening them up and by fostering the integration of research, innovation and education. Furthermore, EIT will contribute to bridge existing gaps in innovation performance across Europe by expanding its Regional Innovation Scheme (EIT RIS). The EIT will work with innovation ecosystems that exhibit high innovation potential based on strategy, thematic alignment and impact, in close synergy with Smart Specialisation Strategies and Platforms.

Broad Lines

- Reinforcing the effectiveness of the existing KICs enabling the transition to self-sustainability in the long-term, and setting up new ones in a limited number of thematic areas;

- Accelerating regions towards excellence in countries that are modest or moderate innovators, in close cooperation with relevant structural funds where appropriate.

2.2. *Innovation and entrepreneurial skills in a lifelong learning perspective, including increasing capacities of universities across Europe*

The EIT education activities will be reinforced to foster innovation and entrepreneurship through better education and training. A stronger focus on human capital development will be grounded on the expansion of existing EIT KICs education programmes in the view of continuing to offer students and professionals high quality curricula based on innovation and entrepreneurship in line in particular with the EU industrial and skills strategy. This may include researchers and innovators supported by other parts of Horizon Europe, in particular MSCA. The EIT will also support the modernisation of universities across Europe and their integration in innovation ecosystems by stimulating and increasing their entrepreneurial potential and capabilities and encouraging them to better anticipate new skills requirements.

Broad Lines

- Development of innovative curricula, taking into account the future needs of industry, and cross-cutting programmes to be offered to students, entrepreneurs and professionals across Europe and beyond where specialist and sector specific knowledge is combined with innovation-oriented and entrepreneurial skills, such as high-tech skills related to digital and key enabling technologies;
- Strengthening and expanding the EIT label in order to improve the visibility and the recognition of EIT of education programmes based on partnerships between different higher education institutions, research centres and companies and offering learning-by-doing curricula and purposeful entrepreneurship education as well as international, inter-organisational and cross-sectorial mobility;

- Development of innovation and entrepreneurship capabilities of the higher education sector, by leveraging the EIT Community expertise in linking education, research and business;
- Reinforcing the role of the EIT Alumni community as role model for new students and strong instrument to communicate EIT impact.

2.3. New solutions to the market

The EIT will facilitate and empower entrepreneurs, innovators, researchers, educators, students and other innovation actors to work together in cross-disciplinary teams to generate ideas and transform them into both incremental and disruptive innovations. Activities will be characterised by an open innovation and cross-border approach, with a focus on including relevant Knowledge Triangle activities that are pertinent to making them a success (e.g. project's promoters can improve their access to: specifically qualified graduates, lead users, start-ups with innovative ideas, non-domestic firms with relevant complementary assets etc.).

Broad Lines

- Support to the development of new products and services where Knowledge Triangle actors will collaborate to make solutions market-ready;
- Provision of high-level services and support to innovative businesses, including technical assistance to fine-tuning of products or services, substantive mentoring, support to secure target customers and raise capital, in order to swiftly reach the market and speed up their growth process.

2.4. *Synergies and value added within Horizon Europe*

The EIT will step up its efforts to capitalise on synergies and complementarities with different actors and initiatives at EU and global levels and extend its network of collaborating organisations at both strategic and operational levels.

Broad Lines

- Cooperation with the EIC in streamlining the support (i.e. funding and services) offered to highly innovative ventures in both start-up and scale-up stages, in particular through KICs;
- Planning and implementation of EIT activities in order to maximise synergies and complementarities with the actions under the Global Challenges and European Industrial Competitiveness Pillar;
- Engage with EU Member States at both national and regional level, establishing a structured dialogue and coordinating efforts to enable synergies with national and regional initiatives, including smart specialisation strategies, in order to identify, share and disseminate good practices and learnings;
- Share and disseminate innovative practices and learnings and contribute to innovation policy in Europe in coordination with other parts of Horizon Europe;
- Provision of input to innovation policy discussions and contribution to the design and implementation of EU policy priorities by continuously working with all relevant European Commission services, other EU programmes and their stakeholders, and further exploring opportunities within policy implementing initiatives;
- Exploitation of synergies with other EU programmes supporting human capital development and innovation (e.g. ESF+, ERDF, Erasmus and COSME Plus/Single Market);

- Building strategic alliances with key innovation actors at EU and international level, and support to KICs to develop collaboration and linkages with key Knowledge Triangle partners from third countries, with the aim of opening new markets for KICs’-backed solutions and attract financing and talents from abroad. Participation of third countries shall be promoted.]

ANNEX II

TYPES OF ACTION

The programme shall be implemented using a limited number of 'types of action', characterised by their distinct objectives or conditions.

The main types of action are as follows:

- Research and innovation action: action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. This may include basic and applied research, technology development and integration, testing, demonstration and validation on a small-scale prototype in a laboratory or simulated environment;
- Innovation action: action primarily consisting of activities directly aimed at producing plans and arrangements or designs for new, altered or improved products, processes or services, possibly including prototyping, testing, demonstrating, piloting, large-scale product validation and market replication;
- Innovation and market deployment actions: actions embedding an innovation action and other activities necessary to deploy an innovation in the market, including the scaling-up of companies, providing Horizon Europe blended finance (a mix of grant-type funding and private finance);
- ERC frontier research (including ERC Proof of Concept): principal investigator-led research actions, hosted by single or multiple beneficiaries (ERC only);
- Training and mobility action: action geared towards improvement of skills, knowledge and career prospects of researchers based on mobility between countries, and, if relevant, between sectors or disciplines;

- Programme co-fund action: action to provide multi-annual co-funding to a programme of activities established and/or implemented by entities managing and/or funding research and innovation programmes, other than Union funding bodies. Such a programme of activities may support networking and coordination, research, innovation, pilot actions, and innovation and market deployment actions, training and mobility actions, awareness raising and communication, dissemination and exploitation, any relevant financial support, such as grants, prizes, procurement, as well as Horizon Europe blended finance or a combination thereof. The programme co-fund action may be implemented by those entities directly or by third parties on their behalf;
- Pre-commercial procurement action: action with the primary aim of realising pre-commercial procurement implemented by beneficiaries that are contracting authorities or contracting entities;
- Public procurement of innovative solutions action: action with the primary aim of realising joint or coordinated public procurement of innovative solutions implemented by beneficiaries that are contracting authorities or contracting entities;
- Coordination and support action: action contributing towards the objectives of the Programme, excluding research and innovation activities (except when undertaken under the component "widening participation and sharing excellence" of the part "Widening Participation and strengthening the European Research Area"), such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies; bottom-up coordination without co-funding of research activities from the EU that allows for cooperation between legal entities from Member States and Associated Countries in order to strengthen the European Research Area;
- Inducement prize: prize to spur investment in a given direction, by specifying a target prior to the performance of the work;

- Recognition prize: prize to reward past achievements and outstanding work after it has been performed;

Public procurement: to implement parts of the programme related to strategic interests and autonomy of the Union and to organise, for the Commission's own purposes, public procurements for studies, products, services and capabilities; public procurement may also take the form of pre-commercial procurement or public procurement of innovative solutions carried out by the Commission or funding bodies on their own behalf or jointly with contracting authorities and contracting entities from Member States and associated countries.

- Indirect actions: research and innovation activities to which the Union provides financial support and which are undertaken by participants;
- Direct actions: research and innovation activities undertaken by the Commission through its Joint Research Centre (JRC).

ANNEX III

PARTNERSHIPS

European Partnerships shall be selected and implemented, monitored, evaluated, phased-out or renewed on the basis of the following criteria:

1) Selection:

- (a) Demonstrating that the European Partnership is more effective in achieving the related objectives of the Programme through involvement and commitment of partners, in particular in delivering clear impacts for the EU and its citizens, notably in view of delivering on global challenges and research and innovation objectives, securing EU competitiveness and contributing to the strengthening of the European Research and Innovation Area and, where relevant, international commitments;

In the case of institutionalised European Partnerships established in accordance with Article 185 TFEU, the participation of at least 40% of the EU Member States is mandatory;

- (b) Coherence and synergies of the European Partnership within the EU research and innovation landscape, following the Horizon Europe rules to the largest extent possible ;
- (c) Transparency and openness of the European Partnership as regards the identification of priorities and objectives in terms of expected results and impacts and as regards the involvement of partners and stakeholders from across the entire value chain, from different sectors and disciplines, including international ones when relevant and not interfering with European competitiveness; clear modalities for promoting participation of SMEs and for disseminating and exploiting results, notably by SMEs, including through intermediary organisations;

- (d) Ex-ante demonstration of additionality and directionality of the European Partnership, including a common strategic vision of the purpose of the European Partnership. This vision will include in particular:
- identification of measurable expected deliverables, outcomes, and impacts within specific timeframes, including key economic and/or societal value for Europe;
 - demonstration of expected qualitative and significant quantitative leverage effects, including a method for the measurement of key performance indicators;
 - approaches to ensure flexibility of implementation and to adjust to changing policy or societal or market needs, or scientific advances, to increase policy coherence between regional, national and EU level;
 - exit-strategy and measures for phasing-out from the Programme.
- (e) Ex-ante demonstration of the partners' long term commitment, including a minimum share of public and/or private investments;

In the case of institutionalised European Partnerships, the financial and/or in-kind, contributions from partners other than the Union, will at least be equal to 50% and may reach up to 75% of the aggregated European Partnership budgetary commitments. For each institutionalised European Partnership, a share of the contributions from partners other than the Union will be in the form of financial contributions. For partners other than the Union and Participating States, financial contributions should be aimed primarily at covering costs related to non-competitive activities.

2) Implementation:

- (a) Systemic approach ensuring active and early involvement of Member States and achievement of the expected impacts of the European Partnership through the flexible implementation of joint actions of high European added value also going beyond joint calls for research and innovation activities, including those related to market, regulatory or policy uptake;

- (b) Appropriate measures ensuring continuous openness of the initiative and transparency during implementation, notably for priority setting and for participation in calls for proposals, visibility of the Union, communication and outreach measures, dissemination and exploitation of results, including clear open access/user strategy along the value chain; appropriate measures for promoting participation of SMEs and informing SMEs;
- (c) Coordination and/or joint activities with other relevant research and innovation initiatives ensuring effective synergies, inter alia to overcome potential implementation barriers at national level and increase cost-effectiveness;
- (d) Commitments, in particular for financial contributions, from each partner in accordance with national provisions throughout the lifetime of the initiative;
- (e) In the case of institutionalised European Partnership access to the results and other action related information for the Commission and any participating state co-funding the relevant action for the purpose of developing, implementing and monitoring of Union policies or programmes.

3) Monitoring:

- (a) A monitoring system in line with the requirements set out in Article 45 to track progress towards specific policy objectives, deliverables and key performance indicators allowing for an assessment over time of achievements, impacts and potential needs for corrective measures;
- (b) Periodic dedicated reporting on quantitative and qualitative leverage effects, including on committed and actually provided financial and in-kind contributions, visibility and positioning in the international context, impact on research and innovation related risks of private sector investments;
- (c) Detailed information on the evaluation process and results from all calls for proposals within partnerships, to be made available timely and accessible in a common e-database.

4) Evaluation, phasing-out and renewal:

- (a) Evaluation of impacts achieved at Union and national level in relation to defined targets and key performance indicators, feeding into the Programme evaluation set out in Article 47, including an assessment of the most effective policy intervention mode for any future action; and the positioning of any possible renewal of a European Partnership in the overall European Partnerships landscape and its policy priorities in close consultation with Member States;
- (b) In the absence of renewal, appropriate measures ensuring phasing-out of Framework Programme funding according to the conditions and timeline agreed with the committed partners ex-ante, without prejudice to possible continued transnational funding by national or other Union programmes, and without prejudice to private investment.

ANNEX IV

SYNERGIES WITH OTHER PROGRAMMES

- [1. Synergies with the European Agricultural Guarantee Fund and the European Agricultural Fund for Rural Development (Common Agricultural Policy-CAP) will ensure that:
 - (a) research and innovation needs of the agricultural sector and rural areas within the EU are identified notably within the European Innovation Partnership "agricultural productivity and sustainability"²⁴ and taken into consideration in the Programme's strategic research and innovation planning process and the work programmes;
 - (b) the CAP makes the best use of research and innovation results and promotes the use, implementation and deployment of innovative solutions, including those stemming from projects funded by the Framework Programmes for research and innovation and from the European Innovation Partnership "agricultural productivity and sustainability";
 - (c) the EAFRD supports the uptake and dissemination of knowledge and solutions stemming from the Programme's results leading to a more dynamic farming sector and new openings for the development of rural areas.

2. Synergies with the European Maritime and Fisheries Fund (EMFF) will ensure that:
 - (a) the Programme and the EMFF are largely interlinked as EU research and innovation needs in the field of marine and maritime policy will be translated through the Programme's strategic research and innovation planning process;

²⁴ Communication from the Commission to the European Parliament and the Council on the European Innovation Partnership 'Agricultural Productivity and Sustainability' (COM(2012) 79 final).

(b) the EMFF supports the rolling out of novel technologies and innovative products, processes and services, in particular those resulting from the Programme in the fields of marine and maritime policy; the EMFF also promotes ground data collection and data processing and disseminates relevant actions supported under the Programme, which in turn contributes to the implementation of the Common Fisheries Policy, the EU Maritime Policy and International Ocean Governance.

3. Synergies with the European Regional Development Fund (ERDF) will ensure that:

(a) arrangements for combined funding from ERDF and Programme are used to support activities providing a bridge between smart specialisations strategies and international excellence in research and innovation, including joint trans-regional/trans-national programmes and pan European Research Infrastructures, with the aim of strengthening the European Research Area;

(b) the ERDF focuses amongst others on the development and strengthening of regional and local research and innovation ecosystems and industrial transformation, including support to the take-up of results and the rolling out of novel technologies and innovative solutions from the Framework Programmes for research and innovation through the ERDF.

4. Synergies with the European Social Fund Plus (ESF+) will ensure that:

(a) the ESF+ can mainstream and scale up innovative curricula supported by the Programme, through national or regional programmes, in order to equip people with the skills and competences needed for the jobs of the future;

(b) arrangements for complementary funding from ESF+ can be used to support activities promoting human capital development in research and innovation with the aim of strengthening the European Research Area;

- (c) the Health strand of the European Social Fund+ mainstreams innovative technologies and new business models and solutions, in particular those resulting from the Programmes, so to contribute to innovative, efficient and sustainable health systems of the Member States and facilitate access to better and safer healthcare for European citizens.

5. Synergies with the Connecting Europe Facility (CEF) will ensure that:

- (a) research and innovation needs in the areas of transport, energy and in the digital sector within the EU are identified and established during the Programme's strategic research and innovation planning process;
- (b) the CEF supports the large-scale roll-out and deployment of innovative new technologies and solutions in the fields of transport, energy and digital physical infrastructures, in particular those resulting from the Framework Programmes for research and innovation;
- (c) the exchange of information and data between the Framework Programme and CEF projects will be facilitated, for example by highlighting technologies from the Framework Programme with a high market readiness that could be further deployed through the CEF.

6. Synergies with the Digital Europe Programme (DEP) will ensure that:

- (a) whereas several thematic areas addressed by the Programme and DEP converge, the type of actions to be supported, their expected outputs and their intervention logic are different and complementary;

- (b) research and innovation needs related to digital aspects are identified and established in the Programme's strategic research and innovation plans; this includes research and innovation for High Performance Computing, Artificial Intelligence, Cybersecurity, combining digital with other enabling technologies and non-technological innovations; support for the scale-up of companies introducing breakthrough innovations (many of which will combine digital and physical technologies; the integration of digital across all the pillar 'Global Challenges and Industrial Competitiveness'; and the support to digital research infrastructures;
- (c) DEP focuses on large-scale digital capacity and infrastructure building in High Performance Computing, Artificial Intelligence, Cybersecurity and advanced digital skills aiming at wide uptake and deployment across Europe of critical existing or tested innovative digital solutions within an EU framework in areas of public interest (such as health, public administration, justice and education) or market failure (such as the digitisation of businesses, notably small and medium enterprises); DEP is mainly implemented through coordinated and strategic investments with Member States, notably through joint public procurement, in digital capacities to be shared across Europe and in EU-wide actions that support interoperability and standardisation as part of developing a Digital Single Market;
- (d) DEP capacities and infrastructures are made available to the research and innovation community, including for activities supported through the Programme including testing, experimentation and demonstration across all sectors and disciplines;
- (e) novel digital technologies developed through the Programme, are progressively be taken up and deployed by DEP;
- (f) the Programme's initiatives for the development of skills and competencies curricula, including those delivered at the co-location centres of the European Institute of Innovation and Technology's KIC-Digital, are complemented by Digital Europe-supported capacity-building in advanced digital skills;

- (g) strong coordination mechanisms for strategic programming and operating procedures for both programmes are aligned, and their governance structures involve the respective Commission services as well as others concerned by the different parts of the respective programmes.

7. Synergies with the Single Market Programme will ensure that:

- (a) the Single Market Programme addresses the market failures which affect all SMEs, and will promote entrepreneurship and the creation and growth of companies. Full complementarity exists between the Single Market Programme and the actions of the future European Innovation Council for innovative companies, as well as in the area of support services for SMEs, in particular where the market does not provide viable financing;
- (b) the Enterprise Europe Network may serve, as other existing SME support structures (e.g. National Contact Points, Innovation Agencies), to deliver support services under the European Innovation Council.

8. Synergies with the LIFE - Programme for Environment and Climate Action (LIFE) will ensure that:

Research and innovation needs to tackle environmental, climate and energy challenges within the EU are identified and established during the Programme's strategic research and innovation planning process. LIFE will continue to act as a catalyst for implementing EU environment, climate and relevant energy policy and legislation, including by taking up and applying research and innovation results from the Programme and help deploying them at national and (inter-)regional scale where it can help address environmental, climate or clean energy transition issues. In particular LIFE will continue to incentivise synergies with the Programme through the award of a bonus during the evaluation for proposals which feature the uptake of results from the Programme. LIFE standard action projects will support the development, testing or demonstration of suitable technologies or methodologies for implementation of EU environment and climate policy, which can subsequently be deployed at large scale, funded by other sources, including by the Programme. The Programme's European Innovation Council can provide support to scale up and commercialise new breakthrough ideas that may result from the implementation of LIFE projects.

9. Synergies with the Erasmus Programme will ensure that:

- (a) combined resources from the Programme and the Erasmus Programme are used to support activities dedicated to strengthening and modernising European higher education institutions. The Programme will complement Erasmus programme support for the European Universities initiative, in particular its research dimension as part of developing new joint and integrated long term and sustainable strategies on education, research and innovation based on trans-disciplinary and cross-sectoral approaches to make the knowledge triangle a reality, providing impetus to economic growth;

- (b) the Programme and the Erasmus Programme foster the integration of education and research through facilitating higher education institutions to formulate and set up common education, research and innovation strategies, to inform teaching with the latest findings and practices of research to offer active research experience to all students and higher education staff and in particular researchers, and to support other activities that integrate higher education, research and innovation.

10. Synergies with the European Space Programme will ensure that:

- (a) research and innovation needs of the space upstream and downstream sector within the EU are identified and established as part of the Programme's strategic research and innovation planning process; space research actions implemented through Horizon Europe will be implemented with regard to procurement and eligibility of entities in line with the provisions of the Space Programme, where appropriate;
- (b) space data and services made available as a public good by the European Space Programme are used to develop breakthrough solutions through research and innovation, including in the Framework Programme, in particular for sustainable food and natural resources, climate monitoring, smart cities, automated vehicles, security and disaster management;
- (c) the Copernicus Data and Information Access Services contribute to the European Open Science Cloud and thus facilitate access to Copernicus data for researchers and scientists; research infrastructures, in particular in situ observing networks will constitute essential elements of the in situ observation infrastructure enabling the Copernicus services, and in turn, they benefit from information produced by Copernicus services.

11. Synergies with the Neighbourhood, Development and International Cooperation Instrument (the 'External Instrument') will ensure that the Programme's research and innovation activities with the participation of Third Countries and targeted international cooperation actions seek alignment and coherence with parallel market uptake and capacity-building actions strands under the External Instrument, based on joint definition of needs and areas of intervention commonly defined during the Programme's strategic research and innovation planning process.
12. Synergies with the Internal Security Fund and the instrument for border management as part of the Integrated Border Management Fund will ensure that:
 - (a) the research and innovation needs in the areas of security and integrated border management are identified and established during the Programme's strategic research and innovation planning process;
 - (b) the Internal Security Fund and the Integrated Border Management Fund support the deployment of innovative new technologies and solutions, in particular those resulting from the Framework Programmes for research and innovation in the field of security research.
13. Synergies with the InvestEU Fund will ensure that:
 - (a) the Programme provide out of its own budget Horizon Europe and EIC blended finance for innovators, characterised by a high level of risk and for which the market does not provide when relevant viable and sustainable financing, and at the same time will provide for appropriate coordination in support of the effective delivery and management of the private finance part of the blended finance through funds and intermediaries supported by InvestEU;
 - (b) financial instruments for research and innovation and SMEs are grouped together under the InvestEU Fund, in particular through a dedicated R&I thematic window, and through products deployed under the SME window targeting innovative companies, in this way also helping to deliver the objectives of the Programme.

14. Synergies with the Innovation Fund under the Emission Trading Scheme (the 'Innovation Fund') will ensure that:
- (a) the Innovation Fund will specifically target innovation in low-carbon technologies and processes, including environmentally safe carbon capture and utilisation that contributes substantially to mitigate climate change, as well as products substituting carbon intensive ones, and to help stimulate the construction and operation of projects that aim at the environmentally safe capture and geological storage of CO₂ as well as innovative renewable energy and energy storage technologies;
 - (b) the Programme will fund the development and demonstration of technologies that can deliver on EU decarbonisation, energy and industrial transformation objectives, especially in its Pillar 2;
 - (c) the Innovation Fund may, subject to fulfilment of its selection and award criteria, support the demonstration phase of eligible projects that may have received the support from the Framework Programmes for research and innovation.
15. Synergies with the Euratom Research and Training Programme will ensure that:
- (a) the Programme and the Euratom Research and Training Programme develop comprehensive actions supporting education and training (including Marie Skłodowska-Curie Actions) with the aim of maintaining and developing relevant skills in Europe;
 - (b) the Programme and the Euratom Research and Training Programme develop joint research actions focussing on cross-cutting aspects of the safe and secure use of non-power applications of ionising radiation in sectors such as medicine, industry, agriculture, space, climate change, security and emergency preparedness and contribution of nuclear science.
16. Synergies with the European Defence Fund will benefit civil and defence research. Unnecessary duplication will be excluded.]

ANNEX V

KEY IMPACT PATHWAY INDICATORS

Impact pathways, and related key impact pathway indicators, shall structure the monitoring of the Framework Programme's (FP) performance towards its objectives. The impact pathways are time-sensitive: they distinguish between the short, medium and long term, including beyond the Programme duration. Impact pathway indicators serve as proxies to report on the progress made towards each type of Research and Innovation (R&I) impact at the FP-level. These indicators shall be compiled using quantitative and qualitative methodologies. Individual Programme parts will contribute to these indicators to a different degree and through different mechanisms. Additional indicators may be used to monitor individual programme parts, where relevant.

The micro-data behind the key impact pathway indicators will be collected for all parts of the Programme and all delivery mechanisms in a centrally managed and harmonised way and at the appropriate level of granularity with minimal reporting burden on the beneficiaries.

In addition and beyond key impact pathways indicators, programme implementation and management data will also be collected and reported in close to real-time, including the monitoring of collaborative links, and network analytics. This will include, inter alia, data on proposals, applications, participations and projects; applicants and participants (including the type of organization, such as SME, country, gender, role in project, scientific discipline/sector, including SSH); and contribution to Union climate objectives.

Scientific impact pathway indicators

The Programme is expected to have scientific impact by creating high-quality new knowledge, strengthening human capital in research and innovation, and fostering diffusion of knowledge and Open Science. Progress towards this impact will be monitored through proxy indicators set along the following three key impact pathways.

Towards scientific impact	Short-term	Medium-term	Longer-term
Creating high-quality new knowledge	<u>Publications</u> - Number of FP peer reviewed scientific publications	<u>Citations</u> - Field-Weighted Citation Index of FP peer reviewed publications	<u>World-class science</u> - Number and share of peer reviewed publications from FP projects that are core contribution to scientific fields
Strengthening human capital in R&I	<u>Skills</u> - Number of researchers involved in upskilling (training, mentoring/coaching, mobility and access to R&I infrastructures) activities in FP projects	<u>Careers</u> - Number and share of upskilled FP researchers with increased individual impact in their R&I field	<u>Working conditions</u> - Number and share of upskilled FP researchers with improved working conditions
Fostering diffusion of knowledge and Open Science	<u>Shared knowledge</u> - Share of FP research outputs (open data/ publication/ software etc.) shared through open knowledge infrastructures	<u>Knowledge diffusion</u> - Share of open access FP research outputs actively used/cited	<u>New collaborations</u> - Share of FP beneficiaries having developed new transdisciplinary/ trans-sectoral collaborations with users of their open FP R&I outputs

Societal impact pathway indicators

The Programme is expected to have societal impact by addressing EU policy priorities and global challenges, including SDGs, following the principles of the Agenda 2030 and the Paris Agreement, through R&I, delivering benefits and impact through R&I missions and strengthening the uptake of innovation in society. Progress towards this impact will be monitored through proxy indicators set along the following three key impact pathways.

Towards societal impact	Short-term	Medium-term	Longer-term
Addressing EU policy priorities through R&I	Outputs - Number and share of outputs aimed at addressing identified EU policy priorities and global challenges (including climate action and SDGs) (multidimensional: for each identified priority)	Solutions - Number and share of innovations and research results addressing identified EU policy priorities and global challenges (including climate action and SDGs) (multidimensional: for each identified priority)	Benefits - Aggregated estimated effects from use of FP-funded results, on tackling identified EU policy priorities and global challenges (including climate action and SDGs), including contribution to the policy and law-making cycle (multidimensional: for each identified priority)
Delivering benefits and impact through R&I missions	R&I mission outputs - Outputs in specific R&I missions (multidimensional: for each identified mission)	R&I mission results - Results in specific R&I missions (multidimensional: for each identified mission)	R&I mission targets met - Targets achieved in specific R&I missions (multidimensional: for each identified mission)
Strengthening the uptake of innovation in society	Co-creation - Number and share of FP projects where EU citizens and end-users contribute to the co-creation of R&I content	Engagement - Number and share of FP beneficiary entities with citizen and end-users engagement mechanisms after FP project	Societal R&I uptake Uptake and outreach of FP co-created scientific results and innovative solutions

Technological/Economic impact pathway indicators

The Programme is expected to have technological/economic impact by influencing the creation and growth of companies, creating direct and indirect jobs, and by leveraging investments for research and innovation. Progress towards this impact will be monitored through proxy indicators set along the following three key impact pathways.

Towards technological/economic impact	Short-term	Medium-term	Longer-term
Generating innovation-based growth	<u>Innovative outputs</u> - Number of innovative products, processes or methods from FP (by type of innovation) & Intellectual Property Rights (IPR) applications	<u>Innovations</u> - Number of innovations from FP projects (by type of innovation) including from awarded IPRs	<u>Economic growth</u> - Creation, growth & market shares of companies having developed FP innovations
Creating more and better jobs	<u>Supported employment</u> - Number of FTE jobs created, and jobs maintained in beneficiary entities for the FP project (by type of job)	<u>Sustained employment</u> - Increase of FTE jobs in beneficiary entities following FP project (by type of job)	<u>Total employment</u> Number of direct & indirect jobs created or maintained due to diffusion of FP results (by type of job)
Leveraging investments in R&I	<u>Co-investment</u> - Amount of public & private investment mobilised with the initial FP investment	<u>Scaling-up</u> - Amount of public & private investment mobilised to exploit or scale-up FP results	<u>Contribution to '3% target'</u> - EU progress towards 3% GDP target due to FP