



Impact Assessment Study for Institutionalised European Partnerships under Horizon Europe

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Impact Assessment Study for Institutionalised European Partnerships under Horizon Europe

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Impact Assessment Study for Institutionalised European Partnerships under Horizon Europe

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In collaboration with

AECOM

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econometrics**
clarity from complexity

CEPS

 **IDATE**
DIGIWORLD


Nomisma
SOCIETÀ DI STUDI ECONOMICI

steer

Think

Trinomics 

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Introduction

This Impact Assessment Study had the primary objective to support and provide input to the impact assessments of the first set of 13 European Institutionalised Partnerships based on Articles 185 and 187 of the Treaty on the Functioning of the EU (TFEU) that are envisaged to be funded under the new Framework Programme for Research and Innovation, Horizon Europe.

In addition, the Impact Assessment Study team contributed to future European policymaking on the overall European Partnership landscape by means of a horizontal analysis of the coherence and efficiency in the implementation of European partnerships. The purpose of this analysis was to draw the lessons learned from the implementation of the impact assessment methodology developed for this study and to formulate recommendations for the refinement and operational design of the criteria for the selection, implementation, monitoring, evaluation and phasing-out for the three types of European Partnerships. Finally, an impact modelling exercise was conducted in order to estimate the potential for longer-term future impacts of the candidate Institutionalised European partnerships in the economic and environmental sustainability spheres.

Technopolis Group was responsible for the overall coordination of the 13 specific impact assessment studies, the development of the common methodological framework, and the delivery of the horizontal analysis. It also conducted specific analyses that were common to all studies, acting as a 'horizontal' team, in collaboration with CEPS, IPM, Nomisma, and Optimat Ltd. For the implementation of the individual impact assessment studies, Technopolis Group collaborated with organisations that are key experts in specific fields covered by the candidate Institutionalised European Partnerships. These partner organisations were Aecom, Idate, Steer, Think, and Trinomics. Cambridge Econometrics took charge of the impact modelling exercise.

The Impact Assessment Study was conducted between July 2019 and January 2020. The 13 Impact Assessment Studies were conducted simultaneously, based upon a common methodological framework in order to maximise consistency and efficiency. The meta-framework reflected the Better Regulation Guidelines and operationalised the selection criteria for European Partnerships set out in the Horizon Europe Regulation. The 'Horizontal analysis of efficiency and coherence of implementation' was conducted in the same time period, building upon the information available on the 44 envisaged European Partnerships landscape as in May 2019, complemented with information on five envisaged European Partnerships as decided by the European Commission in October and November 2019.

This final report contains the reports of all individual impact assessment studies and the 'horizontal' analyses. It is structured in two parts, reflecting the two strands of analysis:

PART I. Impact Assessment Studies for the Candidate Institutionalised European Partnerships

1. Overarching context to the impact assessment studies

This report sets out the overall policy context and methodological framework underlying the impact assessment studies for the candidate Institutionalised European Partnerships. It describes the changes in approach to the public-private and public-public partnerships under Horizon Europe compared to the previous EU Framework Programmes. An example is the requirement that all envisaged European Partnerships be implemented as either co-programmed, co-funded or institutionalised. The impact assessment studies will consider these three scenarios as the different options to be assessed, in compliance with the Better Regulation guidelines and against the functionalities that the candidate partnerships are expected to fulfil. The report describes the common methodological framework to assess the envisaged initiatives accordingly. The report also presents the landscape of European Partnerships at the level of Horizon Europe Pillar 2 clusters, which lay the grounds for all

of the impact assessment studies except the candidate Institutionalised European Partnership for Innovative SMEs.

2. EU-Africa Global Health Candidate Institutionalised European Partnership

This initiative focuses on research and innovation in the area of infectious diseases, with a particular focus on sub-Saharan Africa. It will address the challenges of a sustained high burden of infectious diseases in Africa, as well as the (re)emergence of infectious diseases worldwide. Its objectives will thus be to contribute to a reduction of the burden of infectious diseases in sub-Saharan Africa and to the control of (re)emerging infectious diseases globally. It will do so through investments in relevant research and innovation actions, as well as by supporting the further development of essential research capacity in Africa. The study concluded that an Institutionalised Partnership under Art. 187 of the TFEU is the preferred option for the implementation of this initiative.

3. Candidate Institutionalised European Partnership on Innovative Health

This initiative focuses on supporting innovation for health and care within the EU. It will address the EU-wide challenges raised by inefficient translation of scientific knowledge for use in health and care, insufficient innovative products reaching health and care services and threats to the competitiveness of the health industry. Its main objectives are to create an EU-wide health R&I ecosystem that facilitates translation of scientific knowledge into innovations; foster the development of safe, effective, patient-centred and cost-effective innovations that respond to strategic unmet public health needs currently not served by industry; and drive cross-sectoral health innovation for a globally competitive European health industry. The study concluded that an Institutionalised Partnership based on Article 187 of the Treaty on the Functioning of the EU (TFEU) is the preferred option for the implementation of this initiative.

4. Candidate Institutionalised European Partnership in High Performance Computing

The initiative focuses on coordinating efforts and resources in order to deploy a European HPC infrastructure together with a competitive innovation ecosystem in terms of technologies, applications, and skills. It will address the challenges raised by underinvestment, the lack of coordination between the EU and MS, fragmentation of instruments, technological dependency on non-EU suppliers, unmet scientific demand, and weaknesses in the endogenous HPC supply chain. The initiative has as its main objectives to enhance EU research in terms of HPC and related applications, continued support for the competitiveness EU HPC industry, and fostering digital autonomy in order to ensure long-term support for the European HPC ecosystem as a whole. The study concluded that an Institutionalised Partnership is the preferred option for the implementation of this initiative as it maximises benefits in comparison to the other available policy options.

5. Candidate Institutionalised European Partnership in Key Digital Technologies

This initiative focusses on enhancing the research, innovation and business value creation of European electronics value chains in key strategic market segments in a sustainable manner to achieve technological sovereignty and ultimately make European businesses and citizens best equipped for the digital age. It will address the risks of Europe losing the lead in critical industries and services and emerging KDTs. It will also tackle Europe's limited control over digital technologies that are critical for EU industry and citizens. It has as main objectives to strengthen KDTs which are critical for the competitive position of key European industries in the global markets, to establish European leadership in emerging technologies with high socioeconomic potential and to secure Europe's technological sovereignty to maintain a strong and globally competitive presence in KDTs. The study concluded that the Institutionalised Partnership is the preferred option for the implementation of this initiative.

6. Candidate Institutionalised European Partnership in Smart Networks and Services

This initiative focuses on the development of future networks infrastructure and the associated services. This includes bringing communication networks beyond 5G and toward 6G capabilities, but also the development of the Internet of Things and Edge Computing technologies. It will address the challenges raised by Europe delay in the deployment of network infrastructure and failure to fully benefit from the full potential of digitalisation. It has as main objective to ensure European technological sovereignty in future smart networks and digital services, to strengthen the uptake of digital solutions, and to foster the development of digital innovation that answers to European needs and that are well aligned with societal needs. The study concluded that an institutionalised partnership under article 187 is the preferred option for the implementation of this initiative.

7. Candidate Institutionalised European Partnership in Metrology

This initiative focuses on metrology - that is the science of measurement and the provision of the technical infrastructure that underpins accurate and robust measurements throughout society; measurements that underpin all domains of science and technology and enable fair and open trade and support innovations and the design and implementation of policy and regulations. It will address challenges in the fragmentation of national metrology systems across Europe and the need to meet ever-increasing demands on metrology infrastructure to support the measurement needs of emerging technologies and important policy domains in climate, environment, energy and health. The main objective of the initiative is to establish a sustainable coordinated world-class metrology system in Europe that will increase and accelerate the development and deployment of innovations and contribute to the design and implementation of policy, regulation and standards. The study concluded that an A185 Institutionalised Partnership is the preferred option for the implementation of this initiative.

8. Candidate Institutionalised European Partnership on Transforming Europe's Rail System

This initiative focuses on the development of a pan-European approach to research and innovation in the rail sector. It will address the challenges raised by the lack of alignment of research and innovation with the needs of a competitive rail transport industry and the consequent failure of the European rail network to make its full contribution to European societal objectives. It will also strengthen the competitiveness of the European rail supply industry in global markets. Accordingly, the objectives of the initiative are to ensure a more market-focused approach to research and innovation, improving the competitiveness and modal share of the rail industry and enhancing its contribution to environmental sustainability as well as economic and social development across the European Union. The study concluded that an institutionalised partnership under article 187 is the preferred option for the implementation of this initiative.

9. Candidate Institutionalised European Partnership for Integrated Air Traffic Management

This initiative focuses on the modernisation of the Air Traffic Management in Europe - an essential enabler of safe and efficient air transport and a cornerstone of the European Union's society and economy. The proposed initiative will address the challenges raised by an outdated Air Traffic Management system with a non-optimised performance. The current system needs to be transformed to enable exploitation of emerging digital technologies and to accommodate new forms of air vehicle including drones. The objective is therefore to harmonise European Air Traffic Management system based on high levels of digitalisation, automation and connectivity whilst strengthening air transport, drone and ATM markets competitiveness and achieving environmental, performance and mobility goals. This would create €1,800b benefits to the EU economy if the current initiative can

be built on and accelerated. The study concluded that an Institutionalised Partnership under Art. 187 TFEU is the preferred option for the implementation of this initiative.

10. Candidate Institutionalised European Partnership on Clean Aviation

This initiative focuses on further aeronautical research and innovation to improve technology leading to more environmentally efficient aviation equipment. It will address the challenges raised by the growing ecological footprint of aviation and the challenges and barriers faced by the aviation industry towards climate neutrality. It will also strengthen the competitiveness of the European aeronautical industry in global markets. Accordingly, the objectives of the initiative are to ensure that aviation reaches climate neutrality and that other environmental impacts are reduced significantly by 2050, maintain the leadership and competitiveness of the European aeronautics industry and ensure safe, secure and efficient air transport of passengers and goods. The Impact Assessment study assessed the options for implementation that would allow for an optimal attainment of these objectives. The study concluded that an institutionalised partnership under Art. 187 TFEU is the preferred option for the implementation of this initiative.

11. Candidate Institutionalised European Partnership on Clean Hydrogen

The report assesses the impact of potential initiatives to support, through research and innovation, the growth and development of clean hydrogen, among which an Institutionalised European Partnership is one of the options assessed. The existing challenges for clean hydrogen include the limited high-level scientific capacity and fragmented research activities, the insufficient deployment of hydrogen applications, and consequently weaker EU scientific and industrial value chains. Environmental, health and mobility pressures are also driving the need for cleaner hydrogen generation, deployment and use. An initiative for clean hydrogen must have as a main objective the strengthening and integration of EU scientific capacities, to support the creation, capitalisation and sharing of knowledge. This is necessary to accelerate the development and improvement of advanced clean hydrogen applications, the market entry of innovative competitive clean solutions, to strengthen the competitiveness of the EU clean hydrogen value chains (and notably the SMEs within them), and to develop the hydrogen-based solutions necessary to reach climate neutrality in the EU by 2050. The study concluded that an Institutionalised Partnership under Art. 187 TFEU is the preferred option for the implementation of this initiative.

12. Candidate Institutionalised European Partnership on Safe and Automated Road Transport

This initiative focuses on Connected, Cooperative and Automated Mobility: the use of connected and automated vehicles to create more user-centred, all-inclusive mobility, while also increasing safety, reducing congestion and contributing to decarbonisation. With current road traffic collisions and negative local and global environmental impacts not reducing quickly enough, it will address the challenges raised by the current fragmentation of research across the field, and the threat to European competitiveness if the research agenda does not advance quickly enough. The initiative will focus on strengthening EU scientific capacity and economic competitiveness in the field of CCAM, whilst contributing to wider societal benefits including improved road safety, less environmental impact, and improved accessibility to mobility. The study concluded that a co-programmed partnership is the preferred option for the implementation of this initiative.

13. Candidate Institutionalised European Partnership for a Circular Bio-based Europe

This initiative focuses on intensifying research and innovation allowing to replace, where possible, non-renewable fossil and mineral resources with biomass and waste for the production of renewable products and nutrients, in order to drive forward sustainable and climate-neutral solutions that accelerate the transition to a healthy planet and respect

planetary boundaries. It will address the challenges raised by the fact that the EU economy does not operate within planetary boundaries, is not sufficiently circular and is predominantly fossil based. It will also address the insufficient research and innovation (R&I) capacity and cross-sectoral transfer of knowledge and bio-based solutions, as well as risks posed to the European bio-based industry's global competitiveness. The study concluded that Institutionalised European Partnership based upon Article 187 TFEU is the preferred option for the implementation of this initiative.

14. Candidate Institutionalised European Partnership for Innovative SMEs

The initiative is envisaged as a continuation of the Eurostars 2 programme which is managed by the Eureka network. The initiative focuses on international collaborative R&D of innovative companies, facilitated through a network of national funding organisations as included in the Eureka network. The funded projects are bottom-up and involve small numbers of project partners. The candidate partnership addresses a niche issue namely limited opportunities for international bottom-up collaboration. The partnership provides thus an opportunity for SMEs for international R&D collaboration but does not address specific technological, social, or environmental challenges. Its main objective is to improve the competitiveness of European SMEs through collaborative funding. The study concluded that a co-funded partnership is the preferred option for the implementation of this initiative.

PART II. Horizontal studies

1. Horizontal Analysis of Efficiency and Coherence in Implementation

The focus of this report is on the coherence and efficiency in the current European Partnership landscape under Horizon Europe and the potential to enhance efficiency in the European Partnerships' implementation.

European Partnerships are geared towards playing a pivotal role in tackling the complex economic and societal challenges that constitute the R&I priorities of the Horizon Europe Pillar II and are in a unique position to address transformational failures. Multiple potential interconnections and synergies exist between the candidate European Partnerships within the clusters, but few are visible across the clusters.

As for the improvement of the efficiency in implementation of institutionalised partnerships under Art. 187, potential efficiency and effectiveness gains could be achieved with enhanced collaboration. An option for a common back-office sharing operational implementation activities is worth exploring further through a detailed feasibility study in order to assess whether efficiency gains can be made. Ideally this would be co-designed as a common Partnership approach, leading to a win-win situation for all partners.

2. Impact Modelling of the Candidate Institutionalised European Partnerships

This report presents the results of the use of a macroeconomic model to assess the economic and environmental impacts of the preferred options identified in the individual 13 impact assessment studies. The model used is E3ME. It includes explicit representation for each EU Member State with a detailed sectoral disaggregation.

The impact modelling estimated the impacts of the envisaged initiatives at an aggregated as well as individual level. In total, 14 macroeconomic models have been run, one per reviewed initiative with a time horizon of 2035 and one that combines all initiatives with a time horizon of 2050. The results of each of these models were compared with those of a baseline scenario, which corresponds to a situation where the initiatives would be funded through regular Horizon Europe calls rather than European Partnerships.

Part I. Impact Assessment Studies for the Candidate Institutionalised European Partnerships

1. Overarching Context to the Impact Assessment Studies

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Introduction

This report sets out the overall policy context of the impact assessment studies for the candidate Institutionalised European Partnerships and the methodological framework that was developed for the impact assessment studies.

It describes the changes in approach to the public-private and public-public partnerships under Horizon Europe compared to the previous EU Framework Programmes. An example is the requirement that all envisaged European Partnerships be implemented as either co-programmed, co-funded or institutionalised. The impact assessment studies will consider these three scenarios as the different options to be assessed, in compliance with the Better Regulation guidelines and against the functionalities that the candidate partnerships are expected to fulfil. The report describes the common methodological framework to assess the envisaged initiatives accordingly.

The report also presents the landscape of European Partnerships at the level of Horizon Europe Pillar 2 clusters, which lay the grounds for all of the impact assessment studies except the candidate Institutionalised European Partnership for Innovative SMEs. This analysis is presented in more depth in the report on the 'Horizontal analysis of efficiency and coherence of implementation' in Part II of the Impact Assessment Study report.

The report is structured around two main headings:

- Chapter 1: Background and context to European Partnerships in Horizon Europe and focus of the impact assessment– What is decided
- Chapter 2: The Candidate European Partnerships under Horizon Europe – What needs to be decided

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1 Background and context to European Partnerships in Horizon Europe and focus of the impact assessment– What is decided

1.1 The political and legal context

1.1.1 Shift in EU priorities and Horizon Europe objectives

Horizon Europe is to be set in the broader context of the pronounced **systemic and holistic approach** taken to the design of the new Framework Programme and the overarching Multi-annual Financial Framework (MFF) 2021-27.

The future long-term budget will be a budget for the Union's priorities. In her Political Guidelines for the next European Commission 2019 – 2024, the new President of the European Commission put forward six overarching priorities for the next five years, which reach well beyond 2024 in scope: A European Green Deal; An economy that works for people; A Europe fit for the Digital Age; Protecting our European way of life; A stronger Europe in the world; and A new push for European democracy. These priorities build upon A New Strategic Agenda for 2019–2024, adopted by the European Council on 20 June 2019, which targets similar overarching objectives. Together with the United Nations Sustainable Development Goals (SDGs), they will shape future EU policy responses to the challenges Europe faces and will steer the ongoing transitions in the European economy and society,

The MFF 2021-27 strives to provide a framework that will ensure a more coherent, focused and transparent response to Europe's challenges. A stronger focus on European added value, a more streamlined and transparent budget, more flexibility in order to respond quickly and effectively to unforeseen demands, and above all, an effective and efficient implementation are among the key principles of the MFF. The objective is to strengthen the alignment with Union policies and priorities and to simplify and reform the system in order to "unlock the full potential of the EU budget" and "turn ambitions into reality". Investment from multiple programmes is intended to combine in order to address key crosscutting priorities such as the digital economy, sustainability, security, migration, human capital and skills, as well as support for small businesses and innovation.¹

These principles underlying the MFF 2021-27 are translated in the intent for Horizon Europe "to play a vital role, in combination with other interventions, for creating new solutions and fostering innovation, both incremental and disruptive."² The new Framework Programme finds its rationale in the daunting challenges that Europe is facing, which call for "a radical new approach to developing and deploying new technologies and innovative solutions for citizens and the planet on a scale and at a speed never achieved before, and to adapting our policy and economic framework to turn global threats into new opportunities for our society and economy, citizens and businesses."

In the Orientations towards the first Strategic Plan for Horizon Europe, the need strategically to prioritise and "direct a substantial part of the funds towards the areas where we believe they will matter the most" is emphasised. The Orientations specify, "Actions under Pillar II of Horizon Europe will target only selected themes of especially high impact that significantly contribute to delivering on the political priorities of the Union."

Figure 1, below, which gives an indicative overview of how the EU political priorities are supported under Horizon Europe, shows the major emphasis placed on contributing to the priority 'A European Green Deal', aimed at making Europe the first climate-neutral

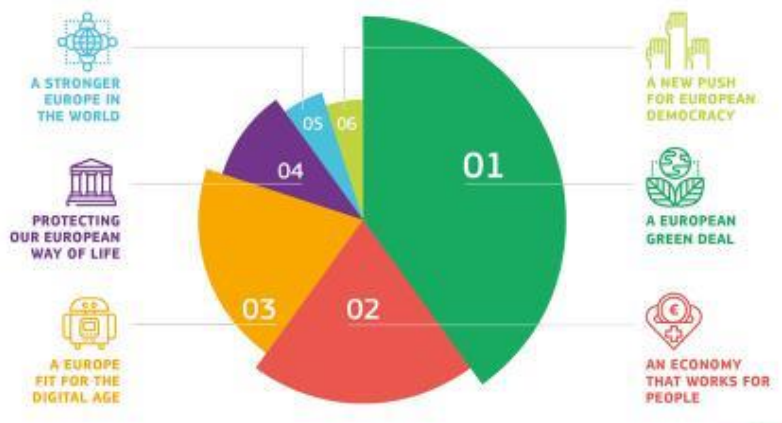
¹ EC (2018) *A Modern Budget for a Union that Protects, Empowers and Defends. The Multiannual Financial Framework for 2021-2027*. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, COM(2018) 321 final

² EC (2019), *Orientations towards the first Strategic Plan for Horizon Europe*.

continent in the world. At least 35 % of the expenditure from actions under the Horizon Europe Programme will address the Sustainable Development Goal 13: Climate Action.

Especially the R&I activities funded under Pillar II, including seven Partnership Areas (see below), are expected to contribute to the attainment of these objectives in an interconnected manner.

Figure 1: Targeted impacts under Horizon Europe by priority



Note: Preliminary, as described in the General orientations towards the first Strategic Plan implementing Horizon Europe.
Source: European Commission (2019) Orientations towards the first Strategic Plan for Horizon Europe, December 2019.

1.1.2 Renewed ambition for European Partnerships

Reflecting its pronounced systemic nature aimed at ‘transformation’ of the European R&I system, Horizon Europe intends to make a more effective use of these partnerships with an **ambitious approach** that is impact oriented and ensures complementarity with the Framework Programme. The **rationalisation** of the partnership landscape, both in terms of number of partnership forms and individual initiatives, constituted a first step in the direction of the strategic role that these policy initiatives are expected to play in the context of Horizon Europe. Future partnerships are expected to “provide mechanisms to consistently aggregate research and innovation efforts into more effective responses to the policy needs of the Union”.³ The expectation is that they will act as **dynamic change agents**, strengthening linkages within their respective ecosystems and with other related ecosystems as well as pooling resources and efforts towards the common objectives in the European, national and regional landscape. They are expected to develop *close synergies* with national and regional programmes, bring together a *broad range of actors* to work towards a common goal, translate *common priorities* into concrete roadmaps and coordinated activities, and turn research and innovation into *socio-economic results and impacts*.

The exact budget dedicated to European Partnerships under Horizon Europe will be agreed only upon decisions on the multiannual financial framework (MFF) 2021-2027 and the overall budget for Horizon Europe. In December 2017, the Council nevertheless introduced the principle of a “possible capping of partnership instruments in the FP budget”.⁴ Accordingly, it reached the common understanding, with the European Parliament, that “the majority of the budget in Pillar II [€52.7bn] shall be allocated to actions outside of

³ European Commission (2019) *Orientations towards the first Strategic Plan implementing the research and innovation framework programme Horizon Europe*. Co-design via web open consultation. Summer 2019.

⁴ Council of the European Union (2017) *From the Interim Evaluation of Horizon 2020 towards the ninth Framework Programme*. Council conclusions 15320/17.

European Partnerships” (Article 8.2(a) of the Common Understanding on the proposal for a regulation establishing Horizon Europe).⁵

1.1.3 Key evolutions as regards the partnership approach

The European R&I partnerships were initially conceived as a means to increase synergies between the European Union and the Member States (Article 181 of the Treaty on the Functioning of the European Union TFEU). Their objectives were to pool the forces of all the relevant actors of R&I systems to achieve breakthrough innovations; strengthen EU competitiveness; and, tackle major societal challenges. The core activities of the European partnerships consist therefore of building critical mass mainly through collaborative projects, jointly developing visions, and setting strategic agendas. They help accelerate the emergence of a programming approach in European R&I with the involvement of all relevant actors and provide flexible structures for partnerships that can be tailored to their goals.⁶

In the consecutive Framework Programmes up to the current Horizon 2020, the partnerships and their forms have mushroomed, leading to an increasing complexity of the partnership landscape. The Horizon 2020 interim evaluation highlighted that the overall landscape of EU R&I funding had become overly complex and fragmented, and a need to improve the partnerships’ openness and transparency. The Lamy report suggested that the European Partnerships should focus on those areas with the greatest European Added Value, contribute to EU R&I missions and would need a simplified and flexible co-funding mechanism.

The Competitiveness Council conclusions of December 2017 called on the Commission and the Member States to jointly consider ways to rationalise the EU R&I partnership landscape. In 2018, the ERAC Ad-hoc Working Group on Partnerships concluded, “the rationalisation of the R&I partnership landscape is needed in order to ensure that the portfolio of R&I partnerships makes a significant contribution to improving the coherence, functioning and quality of Europe's R&I system and that the individual initiatives are able to fully achieve their potential in creating positive scientific and socio-economic impacts and/or in addressing societal challenges”.

Horizon Europe has taken on board these concerns. The Impact Assessment of Horizon Europe gave a clear analysis of the achievements of Partnerships so far as well as the expectations for the new generation of Partnerships. Greater transparency and openness of the partnerships were considered as essential, as well a clear European added value and long-term commitments of the stakeholders involved.

A list of criteria to decide how European Partnerships will be selected, implemented, monitored, evaluated and phased-out was attached as an Annex III to the proposal to establish Horizon Europe (as revised by the partial political agreement). The rationalisation of the Partnership portfolio in Horizon Europe is expected to allow for a reduction from the current 120 to between 45 and 50 partnerships.

⁵ Council of the European Union (2019) *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 rule for participation and dissemination*. Common understanding 7942/19.

⁶ European Commission (2011) *Partnering in Research and Innovation*. Communication from the Commission COM(2011) 572 final.

1.1.4 Overview of legal provisions

The Horizon Europe Regulation (common understanding) defines 'European Partnership' as "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, universities, research organisations, bodies with a public service mission at local, regional, national or international level or civil society organisations including foundations and NGOs), 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." It stipulates that "parts of Horizon Europe may be implemented through European Partnerships".

The Horizon Europe Regulation (common understanding) also stipulates that the European Partnerships are expected to adhere to the "principles of Union added value, transparency, openness, impact within and for Europe, strong leverage effect on sufficient scale, long-term commitments 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." The provisions and criteria set out for the selection and implementation of the European Partnerships reflect these principles.

1.1.5 Overview of the eight Partnership areas

The Horizon Europe Regulation also identifies the following "Areas for possible institutionalised European Partnerships on the basis of Article 185 TFEU or Article 187 TFEU":

- Partnership Area 1: Faster development and safer use of health innovations for European patients, and global health.
- Partnership Area 2: Advancing key digital and enabling technologies and their use, including but not limited to novel technologies such as Artificial Intelligence, photonics and quantum technologies.
- Partnership Area 3: European leadership in Metrology including an integrated Metrology system.
- Partnership Area 4: Accelerate competitiveness, safety and environmental performance of EU air traffic, aviation and rail.
- Partnership Area 5: Sustainable, inclusive and circular bio-based solutions.
- Partnership Area 6: Hydrogen and sustainable energy storage technologies with lower environmental footprint and less energy-intensive production.
- Partnership Area 7: Clean, connected, cooperative, autonomous and automated solutions for future mobility demands of people and goods.
- Partnership Area 8: Innovative and R&D intensive small and medium-sized enterprises.

Considering the realm of these partnership areas, potential synergies exist with the future **missions**. Horizon European introduced these cross-discipline and cross-sector policy instruments as part of its core objective of stimulating further excellence-based and impact-driven R&I. In contrast with the challenges targeted in Horizon 2020, the missions aim at the achievement of well-defined goals to provide solutions, within a specified timeframe, to scientific, technological, economical and/or societal problems. As part of the preparation of Horizon Europe, the European Commission set up five boards to formulate the future missions in the following areas:

- Adaptation to climate change including societal transformation

- Cancer
- Healthy oceans, seas, coastal and inland waters
- Climate-neutral and smart cities
- Soil health and food

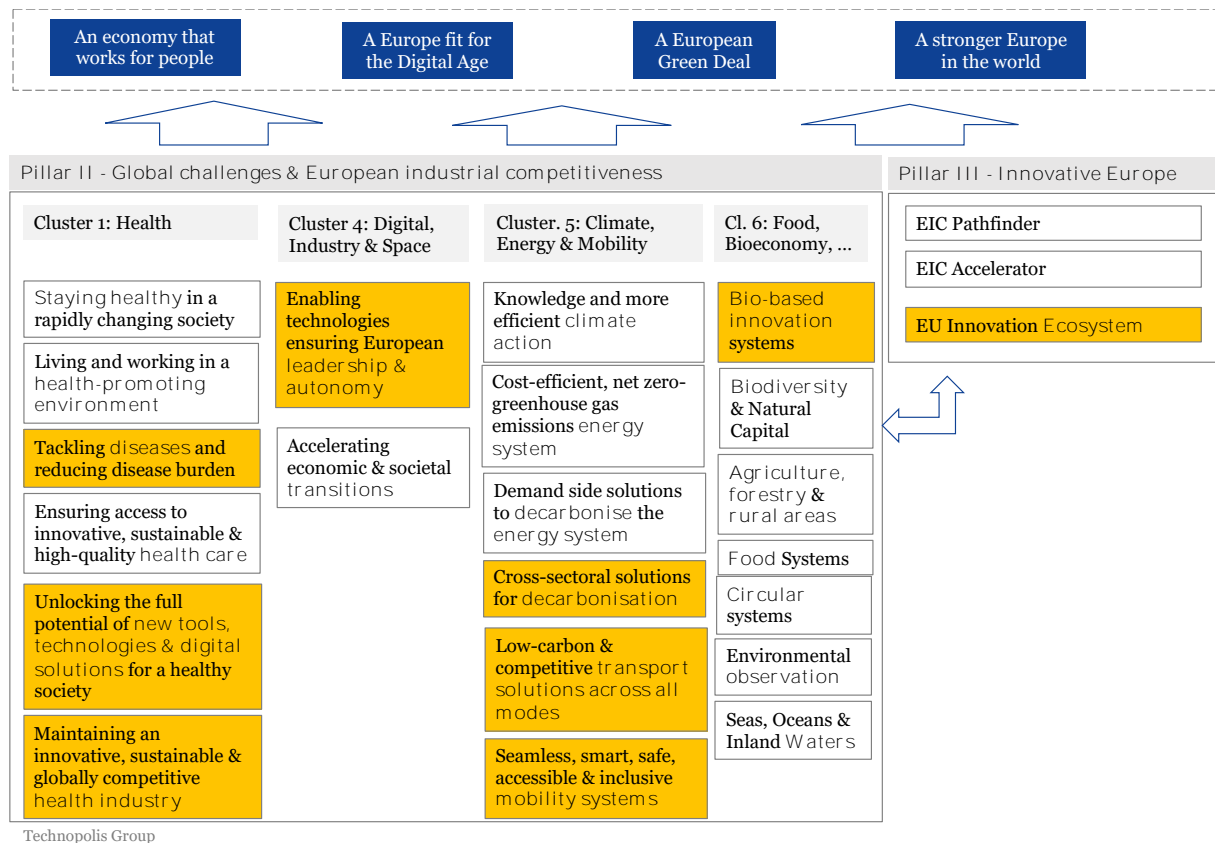
1.2 Typical problems and problem drivers

The European Partnerships are integral part of the framework programme and its three-pillar structure. They are predominantly funded under Pillar 2 “Global Challenges and European industrial competitiveness” and four of its thematic clusters. These clusters cover sectors and technologies, in which research and innovation activities are deemed of crucial importance in solving pressing scientific, societal or economic challenges and ensuring the scientific, technological and industrial leadership of Europe. Only one European Partnership, targeting innovative and R&D intensive SMEs, will instead act under Pillar 3 “Innovative Europe”.

The European Partnerships are intended to contribute to the attainment of the pillars’ and clusters’ **challenges and R&I priorities**. Overarching EU policy priorities addressed are predominantly the European Green Deal, a people-centred economy, the fit for the Digital Age, and a stronger Europe in the world.

In Figure 2, below, the R&I priorities in the Pillars II and III to which the candidate *Institutionalised* Partnerships intend to contribute are highlighted in yellow.

Figure 2: Contribution of Candidate European Institutionalised Partnerships to the Horizon Europe priorities in Pillars II and III



The European Partnerships under Horizon Europe most often find their rationale in addressing **systemic failures**. Their primary function is to create a platform for a strengthened collaboration and knowledge exchange between various actors in the European R&I system and an enhanced coordination of strategic research agenda and/or R&I funding programmes.

The concentration of efforts and resources and pooling of knowledge, expertise and skills on common priorities in a view of solving complex and multi-faceted societal and economic challenges is at the core of these initiatives. Enhanced cross-disciplinary and cross-sectoral collaboration and an improved integration of value chains and ecosystems are among the key objectives of these policy instruments. In the light of Horizon Europe, the aim often is to drive system transitions and transformations.

Especially in fast-growing technologies and sectors such as ICT, the envisaged European Partnerships also react on emerging opportunities and address systemic failures such as shortage in skills or critical mass or cross-sectoral cooperation along the value chains that would hamper attainment of future European leadership and/or strategic autonomy.

Transformational failures addressed aim at reaching a better alignment of the strategic R&I agenda and policies of public and private R&I funders in order to pool available resources, create critical mass, avoid unnecessary duplication of research and innovation efforts, and leverage sufficiently large investments where needed but hardly achievable by single countries.

Market failures are less commonly addressed and relate predominantly to enhancing industry investments thanks to the sharing of risks.

1.3 Description of the options

The proposal for a regulation establishing Horizon Europe⁷ stipulates that parts of the Horizon Europe Framework Programme may be implemented through European Partnerships and establishes three implementation modes: Co-programmed European Partnerships, Co-funded European Partnerships, and Institutionalised Partnerships in accordance with Article 185 TFEU or Article 187 TFEU.

1.3.1 Baseline option – Traditional calls under the Framework Programme

Under this option, strategic programming for research and innovation in the field will be done through the mainstream channels of Horizon Europe. The related priorities will be implemented through traditional calls under the Framework Programme covering a range of activities, but mainly calls for R&I and/or innovation actions. Most actions involve consortia of public and/or private actors in ad hoc combinations, some actions are single actor (mono-beneficiary). There will be no dedicated implementation structures and no further support other than the Horizon Europe actions foreseen in the related Horizon Europe programme or cluster.

Strategic planning mechanisms in the Framework Programmes allow for a high level of flexibility in their ability to respond to particular needs over time, building upon additional input in co-creation from stakeholders and programme committees involving MS. The broad scope of the stakeholders providing their input to the research agenda, however, implies a lower level of directionality than what can be achieved through the partnerships. Often, the long-term perspective of the stakeholder input is limited, which risks reducing strategic capacity in addressing priorities.

The Horizon Europe option also implies a lower level of EU budgetary long-term commitment for the priority. Without a formal EU partnership mechanism, it is also less likely that the stakeholders will develop a joint Strategic Research Agenda and commit to its implementation or agree on mutual financial commitments beyond the single project participation.

⁷ 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 - Common understanding', March 2019

1.3.2 European Partnership

All European Partnerships will be designed in line with the new policy approach for more objective-driven and impactful partnerships. They are based on the common criteria in Annex III of the Horizon Europe Regulation, with few distinguishing elements for the different forms of implementation. All European Partnerships will be based on an agreed Strategic Research and Innovation Agenda / roadmap agreed among partners and with the Commission. For each of them 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 will be defined ex-ante.

Option 1 - Co-programmed European Partnership

This form of European Partnership is based upon a *Memorandum of Understanding* or a *Contractual Arrangement* signed by the European Commission and the private and/or public partners. Private partners are typically represented by one or more industry association, which also functions as a back-office to the partnership. It allows for a *high flexibility* in the profile of organisation involved, objectives pursued, and/or activities implemented.

Co-programmed European Partnerships address *broader communities* across a diverse set of sectors and/or value chains and where the actors have *widely differing capacities and capabilities*. They may encompass one or more associations of organisations from industry, research, NGOs etc as well as foundations and national R&I funding bodies, with no restriction on the involvement of international partners from Associated and non-associated third countries. Different configurations are possible: private actors only, public entities only, or a combination of the two.

The basis, as for all European Partnerships, is the rationale is to create a *platform for 'concertation'*, i.e. in-depth and ongoing consultation of the relevant actors in the European R&I system for the co-development of a strategic research and Innovation agenda, typically covering the period of the next 10 years. The primary ambition is to generate *commitment to a common strategic research and innovation agenda* (SRIA). For the private actors involved, this would allow for a de-risking of their R&I investments and provide predictability of investment paths, for the public actors, it serves as a means to: inform national policy-makers on EU investments and allows for coordination and alignment of their efforts to support R&I in the field at the national level.

The *level of 'additionality is possibly lower than for other partnerships*. There is no expectation of a legally binding commitment from the partners to taking an integrated approach in their individual R&I implementation and it is based on 'best efforts'. However, the Union contribution to the partnership is defined for the full duration and has a comparable level of certainty for the partnerships than in the other forms of implementation. The priorities for the calls, proposed by the partnership members for integration in the Framework Programme Work Programmes, are subject to further input from Member States (comitology) and Commission Services. The full implementation of the Union contribution in the Framework Programme implies that the full array of Horizon Europe funding instruments in the related Pillar can be used, ranging from RIAs to CSAs and including grants, prizes, and procurement.

Option 2 – Co-funded European Partnership

The Co-funded Partnership is based on a Grant Agreement between the Commission and the consortium of partners, resulting from a call for a proposal for a programme co-fund action implementing the European Partnerships in the Horizon Europe Work Programme. Programme co-fund actions provide co-funding to a programme of activities established and/or implemented by entities managing and/or funding research and innovation programmes. Therefore, this form of implementation only allows to address public partners

at its core (comparable to the Article 185 initiatives below), while industry can nevertheless be addressed by the activities of the partnerships, but not make formal commitments and contributions to it. The expectation is that these entities would cover most if not all EU Member States (MS). Also 'international' funding bodies can participate as partners, which creates the potential for an efficient interaction with strategic international partners. Legal entities in countries that are not part of the programme co-fund consortium, are usually excluded from funding under the calls launched by the consortium.

The basic rationale for this partnership option is to bring MS together to invest at scale in key R&I issues of general and common interest. The joint programme of activities is agreed by the partners and with the EU and typically focuses on societal grand challenges and specifically, areas of high public good where EU action will add value while reflecting national priorities and/or policies. The ultimate intent is to create the greatest possible impact by pooling and/or coordinating national programmes and policies with EU policies and investments, helping to overcome fragmentation of the public research effort. Member States that are partners in this partnership become the 'owners' of the priority and take sole responsibility for its funding. Commitments of the partners and the European Union are ensured through the Grant Agreement.

Based on national programmes, this partnership option shows a particularly high level of flexibility in terms of activities to be implemented - directly by the national funding bodies (or governmental organisation "owning" institutional programmes), or by third parties receiving financial support (following calls for proposals launched by the consortium). The broad range of possible activities include support for 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.

Option 3 – Institutionalised European Partnership

This type of Partnership is the most complex and high-effort arrangement and will be based on a Council Regulation (Article 187) or a Decision by the European Parliament and Council (Art 185) and implemented by dedicated structures created for that purpose. The legal base for this type of partnership limits the flexibility for a change in core objectives, partners, and/or commitments as these would require amending legislation.

The basic rationale for this type of partnership is the need for a strong integration of R&I agenda's in the private and/or public sectors in Europe in order to address a strategic challenge or realise an opportunity. The focus is on major long-term strategic challenges and priorities beyond the framework of a single Framework Programme where collective action – by private and/or public sectors – is necessary to *achieve critical mass* and *address the full extent of the complexities* of the ecosystem concerned.

The long-term commitment expected from the European Union and its partners is therefore much larger than for any of the other options, given the considerably higher investment in the preparation and implementation of the Partnership. As a result, this type of partnership can be selected only if 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. The commitment for contributions by the partnership members is expected to be at least equal to 50% and may reach up to 75% of the aggregated European Partnership budgetary commitments.

The partnership members have a high degree of autonomy in developing the strategic research agenda and annual work programmes and call topics, based on a transparent and accessible process, and subject to the approval of the Commission Services. The choice of topics addressed in the (open) calls are therefore strongly aligned with the needs defined. Normally, the strategic priorities are fully covered by the annual work programmes in the

partnership, even though it is in principle possible to keep certain topics for calls in the FP thus complementing the activities in the partnership. The full integration in the Framework Programme implies that the full array of Horizon Europe funding instruments in the related Pillar can be used, ranging from RIAs to CSAs and including grants, prizes, and procurement.

Two forms of Institutionalised Partnerships are of direct relevance to this study, influencing the constellation of partners involved.

Institutionalised Partnerships based upon Art 185 TFEU

Article 185 of the TFEU allows the Union to participate in programmes jointly undertaken by Member States and limits therefore the scope of partners to Member States and Associated Third countries. This type of Institutionalised Partnership aims therefore at reaching the greatest possible impact through the integration of national and EU funding, aligning national strategies in order to optimise the use of public resources and overcome fragmentation of the public research effort.

It brings together R&I governance bodies of most if not all EU Member States (legal requirement: at least 40% of Member States) as well as Associated Third Countries that designate a dedicated legal entity (Dedicated Implementation Structure) for the implementation. By default, membership of non-associated Third Countries is not foreseen. Such membership is possible only if it is foreseen in the basic act and subject to conclusion of an international agreement. Eligibility for participation and funding follows by default the rules of the Framework programme, unless a derogation is introduced in the basic act.

Institutionalised Partnerships under Art. 187 TFEU

This type of Institutionalised Partnership aims at reaching the greatest possible impact by integrating the strategic R&I agendas of private and/or public actors and by leveraging the partners' investments in order to tackle R&I and societal challenges and/or contribute to Europe's wider competitiveness goals.

It brings together a stable set of partners with a strong commitment to taking a more integrated approach and requires the set-up of a dedicated legal entity (Union body, Joint Undertaking) that carries full responsibility for the management of the partnership and implementation of the calls.

Different configurations are possible: partnerships focused on creating strategic industrial partnerships where, most often, the partner organisations are represented by one or more industry associations, or in some cases individual private partners; partnerships coordinating national ministries, public funding agencies, and governmental research organisations in the Member States and Associated Countries; or a combination of the two (the so-called tripartite model). By default, membership of non-associated Third Countries is not foreseen. Such membership is possible only if it is foreseen in the basic act and subject to conclusion of an international agreement. Eligibility for participation and funding follows by default the rules of the Framework programme, unless a derogation is introduced in the basic act.

2 The Candidate European Partnerships under Horizon Europe – What needs to be decided

2.1 Portfolio of candidates for Institutionalised Partnerships under Horizon Europe

2.1.1 The process for identifying the priorities for Institutionalised Partnerships under Horizon Europe

In May 2019, the European Commission consulted the Member States on a list of 44 possible candidates for European Partnership which it had identified as part of the preparation of the first Strategic Planning of Horizon Europe. This list was also part of the

Orientations towards the first Strategic Plan implementing Horizon 2020⁸ which served as a basis for an Open Public Consultation from July to October 2019. In October and November 2019, the European Commission and the Member States agreed on increasing the number of candidate European partnerships to 49. Subsequent discussions until the adoption of Horizon Europe will focus on ensuring the overall consistency of the EU partnership landscape and its alignment with the EU overarching priorities and on defining the precise implementation modalities.

In parallel, the European Commission completed inception impact assessments on the candidate institutionalised European partnerships. Stakeholders had the opportunity to provide their feedback on these inception impact assessments in August 2019. A web-based open public consultation to collect opinions on all candidate institutionalised partnerships (but the candidate EuroHPC partnership) was organised between September and October 2019.

2.1.2 Overview of the overall landscape of candidate European Partnerships subject to the impact assessment

Figure 3, below, gives an overview of all European Partnerships that are currently envisaged for funding under Horizon Europe. The candidate Institutionalised Partnerships that are the subject for this impact assessment study are coloured in dark orange.

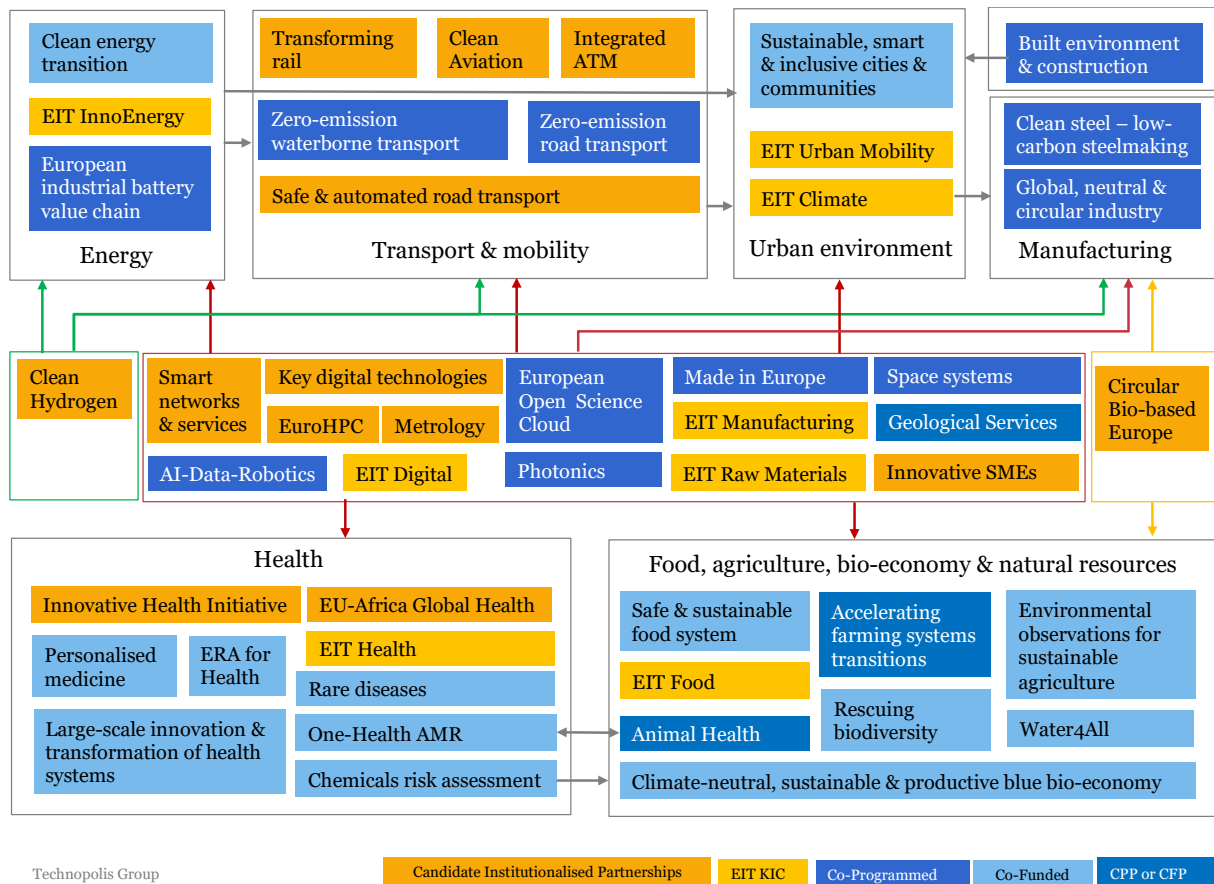
The European Partnerships can be categorised into two major groupings: '*horizontal*' partnerships focused on the development of technologies, methods, infrastructures and resources/materials, and '*vertical*' partnerships focused on the needs and development of a specific application area, be it industrial or societal.

The diagram below shows the central position of the '**horizontal**' partnerships in the overall landscape, developing methodologies, technologies or data management infrastructures for application in the other priority areas. These 'horizontal' partnerships are predominantly proposed as Institutionalised or Co-programmed Partnerships, in addition to a number of EIT KICs. The European Open Science Cloud (EOSC) partnership, for example, will support research partnerships by providing an infrastructure for the storage, management, analysis and re-use of research data.

The upper banner of the diagram groups the **industry-oriented 'vertical' partnerships**. Under Horizon Europe, they have in common a pronounced focus on enhancing sustainability. In this context, the banner includes also one of the most recent agreed-upon partnerships focused on the urban environment. This partnership illustrates the introduction under Horizon Europe of *challenge-oriented* cross-cluster partnerships. Multiple interconnections are envisaged among the 'vertical' partnerships in the different industry sectors covered. In the transport sector, the partnerships are predominantly proposed as Institutionalised Partnerships. In the other sectors, we see a mix of Co-Programmed Partnerships and EIT KICs. There are only two Co-Funded Partnerships.

⁸ Orientations towards the first Strategic Plan implementing the research and innovation framework programme Horizon Europe, Co-design via Web Open Consultation (2019), see more here https://ec.europa.eu/research/pdf/horizon-europe/ec_rtd_orientations-towards-the-strategic-planning.pdf

Figure 3: Landscape of European Partnerships under Horizon Europe (2019)



The lower banner includes the **'vertical' partnerships in the societal application areas**. Striking is the dominance of the Co-Funded Partnerships (to be noted that in the Food/agriculture cluster, the partnership type still needs to be decided for several envisaged partnerships). We also note the limited interconnections that are envisaged between the two areas. An exception is the newly envisaged cross-cluster European Partnerships 'One Health AMR'.

2.2 Assessing the necessity of a European Partnership, possible options for implementation and their cost-effectiveness

In this section we set out the methodological framework that underpins the impact assessment studies. In line with the Better Regulation Guidelines, the impact assessment is intervention logic-based and impact-oriented.

The impact assessment allowed also for the conduct of the 'necessity test' for a European Partnership as set out in the Horizon Europe regulation. Pivotal in this context was the identification of the Horizon Europe calls as Option 0 as well as Baseline Option, allowing for a comparative analysis of the three partnership forms (Options 1-3) along all of the assessment dimensions – in relation to each other as well as to the Horizon Europe calls. The options assessment therefore incorporated the required 'necessity test'.

2.2.1 Assessment of the selection criteria

The common methodological framework that we defined for the 13 individual Impact Assessment studies reflects the approach defined in the Better Regulation guidelines. It also integrates the specific criteria for the use of the different types of European Partnerships as they are defined in the Horizon Europe Common Understanding (Article 8 and Annex III). Specifically this regards the **selection criteria** which have to be demonstrated as a minimum in order to justify the necessity of a European Partnership instead of regular Horizon Europe calls only and the implementation criteria in Article 8

1(a), (b) and (c) with certain elements distinguishing the use of the different partnership implementation modes (Table 1).

Table 1: Horizon Europe selection criteria for the European Partnerships

Common selection criteria and principles	Specifications
More effective (Union added value) clear impacts for the EU and its citizens	<ul style="list-style-type: none"> • delivering on global challenges and research and innovation objectives • securing EU competitiveness • securing sustainability • contributing to the strengthening of the European Research and Innovation Area • where relevant, contributing to international commitments
Coherence and synergies	<ul style="list-style-type: none"> • within the EU research and innovation landscape • coordination and complementarity with Union, local, regional, national and, where relevant, international initiatives or other partnerships and missions
Transparency and openness	<ul style="list-style-type: none"> • identification of priorities and objectives in terms of expected results and impacts • involvement of partners and stakeholders from across the entire value chain, from different sectors, backgrounds 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
Additionality and directionality	<ul style="list-style-type: none"> • common strategic vision of the purpose of the European Partnership • approaches to ensure flexibility of implementation and to adjust to changing policy, societal and/or market needs, or scientific advances, to increase policy coherence between regional, national and EU level • demonstration of expected qualitative and significant quantitative leverage effects, including a method for the measurement of key performance indicators • exit-strategy and measures for phasing-out from the Programme
Long-term commitment of all the involved parties	<ul style="list-style-type: none"> • a minimum share of public and/or private investments • In the case of institutionalised European Partnerships, established in accordance with article 185 or 187 TFEU, 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

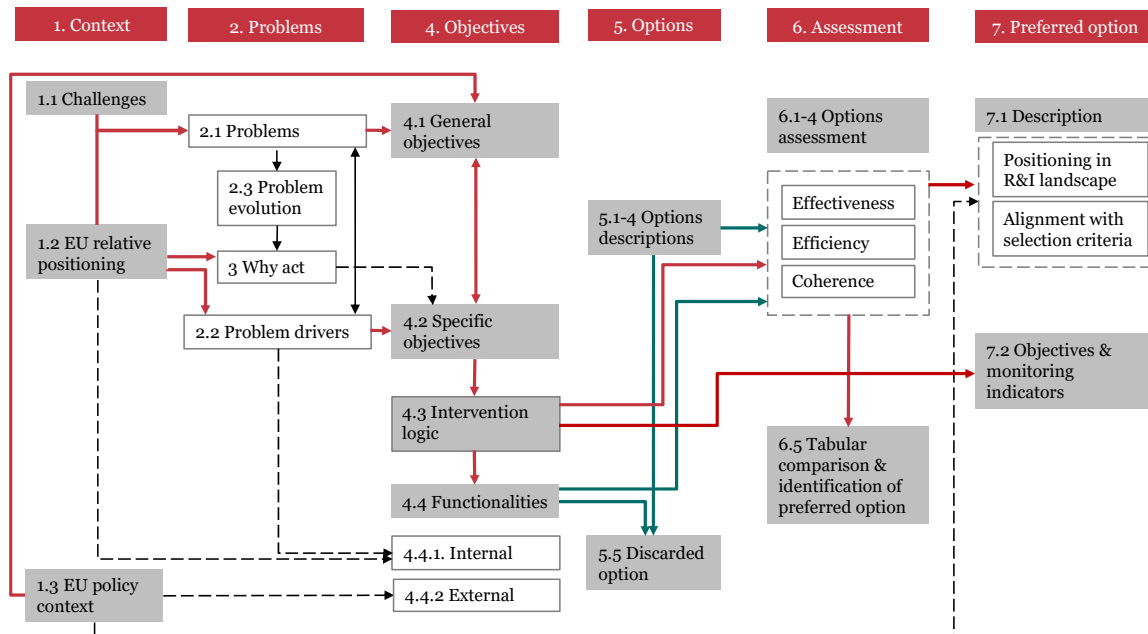
The **Better Regulation guidelines** remained the primary point of reference for the 13 individual Impact Assessment studies. The different steps of the IA process were carried out in a consistent manner in the 13 individual IA studies, supported by horizontal analyses (i.e. common to all studies) such as bibliometrics/patent analysis, social network analysis, the partnership portfolio mapping and analysis, as well as the analysis of the Open Public Consultation data.

The **selection criteria** for the European Partnerships related to effectiveness and coherence fit reasonably well in the Better Regulation impact assessment structure. More problematic was the coverage of the other three criteria groupings, i.e. the criteria of Openness and Transparency, Additionality and Directionality, and the Ex-ante demonstration of commitment.

The solution was the introduction of a section on the '**Functionalities of the initiative**', in which set out our view on *how* the initiative should *concretely* respond to the selection criteria of 'coherence and synergies', 'openness and transparency' and 'additionality and directionality' in order to reach its objectives. We focused on those aspects that are not covered in other sections of this report, such as coherence and synergies, and covered those elements that from our analysis of the partnership options resulted being **key distinguishing features** of the partnership options, i.e. the composition of the partnership ('openness', including from a geographical perspective), the type of activities implemented ('flexibility'), and the level of directionality and integration of the stakeholders' R&I strategies needed ('directionality and additionality').

The logical process is summarised in Figure 4, below. The diagram shows how the 'functionality' sections constituted an important passage from the objectives and intervention logic sections to the options assessment. Building upon information collected in the previous sections (context, problem and objectives analysis) and in combination with the description of the available options, the description of the desirable 'functionalities' allowed for, on the one hand, the identification of the discarded option(s) and, on the other hand, the options assessment against coherence and against the selection criteria of 'Openness and Transparency' and 'Additionality and Directionality'. In the final chapter of the Impact Assessment report, the alignment of the preferred option with the criteria for the selection of European Partnerships was described, emphasising the outcomes of the 'necessity test'.

Figure 4: Flow of the analysis



Notes: the numbers indicate the related chapters or sections in the Impact Assessment reports

2.2.2 Methodological approach

Overview of the methodologies employed

The understanding of the overall context of the candidate institutionalised European Partnerships relies on a desk research partly covering the main impacts and lessons learned

from their predecessor partnerships (if any). This was complemented with a set of quantitative analyses of the Horizon 2020-funded partnerships, or in case these did not exist, the H2020-funded projects in the field. The analyses included a portfolio analysis, a stakeholder and social network analysis in order to profile the actors involved as well as their co-operation patterns, and an assessment of the partnerships' outputs (bibliometrics and patent analysis). A cost modelling exercise was performed in order to feed into the efficiency assessments of the partnership options (see below).

Public consultations (open and targeted) supported the comparative assessment of the policy options. Each study interviewed up to 50 relevant stakeholders (policymakers, business including SMEs and business associations, research institutes and universities, and civil organisations, among others). They also used the results from the Open Public Consultation organised by the European Commission (Sep – Nov 2019) and the feedback on the Inception Impact Assessments of the 13 candidate institutionalised European Partnerships that the European Commission received in September 2019.

The timing of the Impact Assessment studies, in parallel to the negotiations between the European Commission and the existing Joint Undertakings on the specific implementation of the rules for the future European Partnership, as well as the ongoing discussions within the existing partnership on their future research directions, has set potential limits to the validity of the input and feedback collected from the stakeholders during the consultations.

A more detailed description of the methodology is provided in the Annexes C of each impact assessment report.

Method for identifying the preferred choice

The four policy options were compared along a range of key parameters. The comparison along these parameters was carried out in an evidence-based manner. A range of quantitative and qualitative evidence was used, including ex-post evaluations; foresight studies; statistical analyses of Framework Programmes application and participation data and Community Innovation Survey data; analyses of science, technology and innovation indicators; econometric modelling exercises producing quantitative evidence in the form of monetised impacts; reviews of academic literature on market and systemic failures and the impact of research and innovation, and of public funding for research and innovation; sectoral competitiveness studies; expert hearings; etc.

Options assessment related to effectiveness and coherence

On the basis of the evidence collected and gathered, the Impact Assessment study teams assessed the effectiveness of the retained policy options along three dimensions corresponding to the different categories of likely impacts: scientific, economic and technologies, and societal (including environmental) impacts. The Impact Assessment study teams considered to which extent the retained policy options fulfilled the desirable 'functionalities' and were therefore likely to produce the targeted impacts. This analysis resulted in a scoring of the policy options along a three-point scale.⁹ Instead of a compound score, the assessment of the effectiveness of the policy options concluded on as many scores as there are expected impacts.

Likewise, the impact assessment study teams attributed scores (using the same approach as above) reflecting the potential of each retained policy option for ensuring coherence with programmes and initiatives within (internal coherence) and beyond (external coherence) Horizon Europe.

⁹ Scores vary from + to +++, where + refers to low potential for presenting a low potential for reaching the likely impacts, ++ to a good potential, and +++ to a high potential.

Scores were justified in a consistent and detailed manner in order to avoid arbitrariness and spurious accuracy. A qualitative or even quantitative explanation was provided of why certain scores were given to specific impacts.

When assessing the respective efficiency of the retained policy options, the Impact Assessment study teams considered the scores related to effectiveness and the identified costs to conduct a “value for money” (or cost-effectiveness) analysis. They accordingly attributed a comparative score to each of the options ranging from 1 (option with the highest costs) to 3 (options with the lowest costs).

Options assessment related to efficiency

A standard cost model

The ‘horizontal’ team has reviewed the cost categories and costs for each of the four policy options, at some length. Our first model used published data from past partnerships and Horizon 2020 calls working with the Commission’s standard accounting codes (Title 1, Title 2, Title 3). The analysis revealed wide-ranging differences in costs across partnerships and functions, which was thought to be too complex to be helpful to the current exercise. As a result, we created a static, common model using average costs as a means by which to indicate the order of magnitude of effort and thereby reveal the principal differences between each of the policy options.

The model was developed jointly with the European Commission services and is presented in the study Data report (D1.2), along with an explanation of the data sources used and the assumptions made.

It is important to note that the costs identified are theoretical and do not reflect the actual costs of any existing individual partnership. In light of this fact, and to avoid any risk of misunderstanding, we have transposed the financial estimates into a qualitative presentation using + / - system in order to compare the various cost elements for each policy option with the equivalent costs for the baseline policy options (see Table 2).

The principal differences in costs as compared with regular Horizon Europe calls relate to the European Partnerships’ one-off costs (e.g. developing the proposal and Strategic Research and Innovation Agenda), additional supervision by the European Commission and any additional programme management effort. The main difference between the three types of European Partnership are twofold: (i) the extent to which a partnership will need to run a limited or comprehensive programme management unit and (ii) the extent to which a new partnership may benefit from a pre-existing programme management unit that will greatly reduce or eliminate the set-up costs that would apply to a wholly new partnership.

Table 2: Intensity of additional costs compared with HEU Calls (for Partners, stakeholders, public and EC)

Cost items	Option 0	Option 1	Option 2	Option 3 -Art. 185	Option 3 -Art. 187
Preparation and set-up costs					
Preparation of a partnership proposal (partners and EC)	0	++	++	++	++
Set-up of a dedicated implementation structure	0	0	0	Existing: + New: ++	Existing: ++ New: +++
Preparation of the SRIA / roadmap	0	++	++	++	++

Cost items	Option 0	Option 1	Option 2	Option 3 -Art. 185	Option 3 -Art. 187
Ex-ante Impact Assessment for partnership	0	0	0	+++	+++
Preparation of EC proposal and negotiation	0	0	0	+++	+++
Running costs (Annual cycle of implementation)					
Annual Work Programme preparation	0	+	0	+	+
Call and project implementation	0	0 In case of MS contributions: +	+	+	+
Cost to applicants	Comparable, unless there are strong arguments of major differences in oversubscription				
Partners costs not covered by the above	0	+	0	+	+
Additional EC costs (e.g. supervision)	0	+	+	+	++
Winding down costs					
EC	0	0	0	0	+++
Partners	0	+	0	+	+

Notes: 0: no additional costs, as compared with the baseline; +: minor additional costs, as compared with the baseline; ++: medium additional costs, as compared with the baseline; +++: higher costs, as compared with the baseline

Rationale for the comparative scoring on 'overall costs' and 'cost-efficiency' in the scorecard

In the scorecard analysis, the scores related to the set-up and implementation costs will allow the study teams to consider the scale of the expected benefits and thereby allow a simple "value for money" analysis (cost-effectiveness).

Table 3 shows how we translated the cost analysis into a series of numerical scores.

Table 3: Cost-efficiency matrix

	Option 0: Horizon Europe calls	Option 1: Co-programmed	Option 2: Co-funded	Option 3: Institutionalised
Overall cost	3	2	1	1
Cost-efficiency	3	3	2	2

For the 'overall cost' dimension, we assigned a score 1 to the option with the highest additional costs and a score 3 to the option with the lowest additional costs compared to the baseline. This was based on the following considerations:

- **Horizon Europe regular calls** will have the lowest overall cost among the policy options and have therefore been **scored 3** on this criterion, using a scale of 1-3 where 3 is best (lowest additional costs). This adjudged score is based on two facts: firstly, that Horizon Europe will not entail any additional one-off costs to set up or discontinue

the programme, where each of the other policy options will require at least some additional set-up costs; and secondly, that Horizon Europe will not require any additional running costs, where each of the other policy options will involve additional efforts by the Commission and partners in the carrying out of necessary additional tasks (e.g. preparing annual work programmes).

- A **co-programmed partnership** (Option 1 - CPP) will entail slightly higher overall costs as compared with the baseline policy option and has therefore been given a **score of 2**, using a scale of 1-3 where 3 is best (lowest additional costs). There will be some additional set-up costs linked for example with the creation of a strategic research and innovation agenda (SRIA) and additional running costs linked with the partners role in the creation of the annual work programmes and the Commission's additional supervisory responsibilities. A CPP will have lower overall costs than each of the other types of European Partnership, as it will function with a smaller governance and implementation structure than will be required for a Co-Funded Partnership or an Institutionalised Partnership and – related to this – its calls will be operated through the existing HEU agencies and RDI infrastructure and systems.
- The **Co-Funded Partnership** (Option 2 – CFP) has been **scored 1** on overall cost, using a scale of 1-3 where 3 is best (lowest additional costs). This reflects the additional set-up costs of this policy option and the substantial additional running costs for partners, and the Commission, of the distributed, multi-agency implementation model.
- The **Institutionalised Partnership** (Option 3 - IP) has been **scored 1** on overall cost, using a scale of 1-3 where 3 is best (lowest additional costs). This reflects the substantial additional set-up costs of this policy option – and in particular the high costs associated with preparing the Commission proposal and negotiating that through to a legal document – and the substantial additional running costs for the Commission associated with the supervision of this dedicated implementation model.

In relation to **cost-efficiency**, we considered that while there is a clear gradation in the overall costs of the policy options, the cost differentials are less marked when we take into account financial leverage (co-financing rates) and the total budget available for each of the policy options, assuming a common Union contribution. From this perspective, there are only one or two percentage points that split the most cost-efficient policy options – the baseline and CPP policy options – and the least cost-efficient – the CFP and IP. We have therefore assigned a score of 3 to the baseline Option 0 and CPP options for cost-efficiency (no or minor additional costs, as compared with the baseline) and a score of 2 for the CFP and IP policy options (medium additional costs, as compared with the baseline).

Scorecard analysis for the final options assessment

The scorecard analysis built a hierarchy of the options by individual criterion and overall. The scorecard exercise supported the systematic appraisal of alternative policy options across multiple types of monetary, non-monetary and qualitative dimensions. It also allowed for easy visualisation of the pros and cons of alternative options.

Each option was attributed a value of 1 to 3, scoring the adjudged performance against each criterion with the three broad appraisal dimensions of effectiveness, efficiency and coherence.

Scores were justified in a consistent and detailed manner in order to avoid arbitrariness and spurious accuracy. A qualitative or even quantitative explanation was provided of why certain scores were given to specific impacts, and why one option scores better or worse than others.

The scorecard analysis allowed for the identification of a single preferred policy option or in case of an inconclusive comparison of options, a number of 'retained' options or hybrid. The final selection is a policy decision.

2.3 Cross-partnership challenges in Horizon Europe clusters

In this section we set the envisaged and candidate partnerships in the context of the Horizon Europe clusters and the related higher-level EU policy objectives and priorities. We focus on the evolution of the policy context including the new European Green Deal/climate neutrality objectives, the Horizon Europe Framework relevant to this cluster, and the link to the relevant Sustainable Development Goals. Seeing the focus on the Pillar II clusters, this section excludes the candidate *Institutionalised Partnership for Innovative SMEs*.

2.3.1 Cluster 1 – Health

Research and innovation (R&I) actions under this cluster will aim at addressing the major socio-economic and societal burden that diseases and disabilities pose on citizens and health systems of the EU and worldwide.

The R&I activities funded under the Pillar II Cluster Health aim at contributing to the achievement of the Sustainable Development Goal 'Ensuring healthy lives and promoting well-being for all at all ages' resulting from investments in research and innovation focused on three overarching EU policy objectives: 'An economy that works for people', 'A Europe fit for the Digital Age', and 'A European Green Deal' (see Figure 5, below). The Horizon Europe proposal for a regulation defined the areas for possible institutionalised European partnerships on the basis of Article 185 TFEU or Article 187 TFEU as "*Partnership Area 1: Faster development and safer use of health innovations for European patients, and global health*".

At the core in this cluster are the R&I orientations that aim at ensuring that citizens *stay healthier throughout their lives* due to improved health promotion and disease prevention and the adoption of healthier behaviours and lifestyles, the development of *effective health services* to tackle diseases and reduce their burden, and an improved access to *innovative, sustainable and high-quality health care*. These objectives require an unlocking of the full potential of *new tools, technologies and digital solutions* and ensuring a *sustainable and globally competitive health-related industry* in the EU, allowing for the delivery of, e.g. personalised healthcare services. Last but not least, the citizens' health and well-being need to be *protected from environmental degradation and pollution*, addressing a.o. climate-related challenges to human health and health systems.

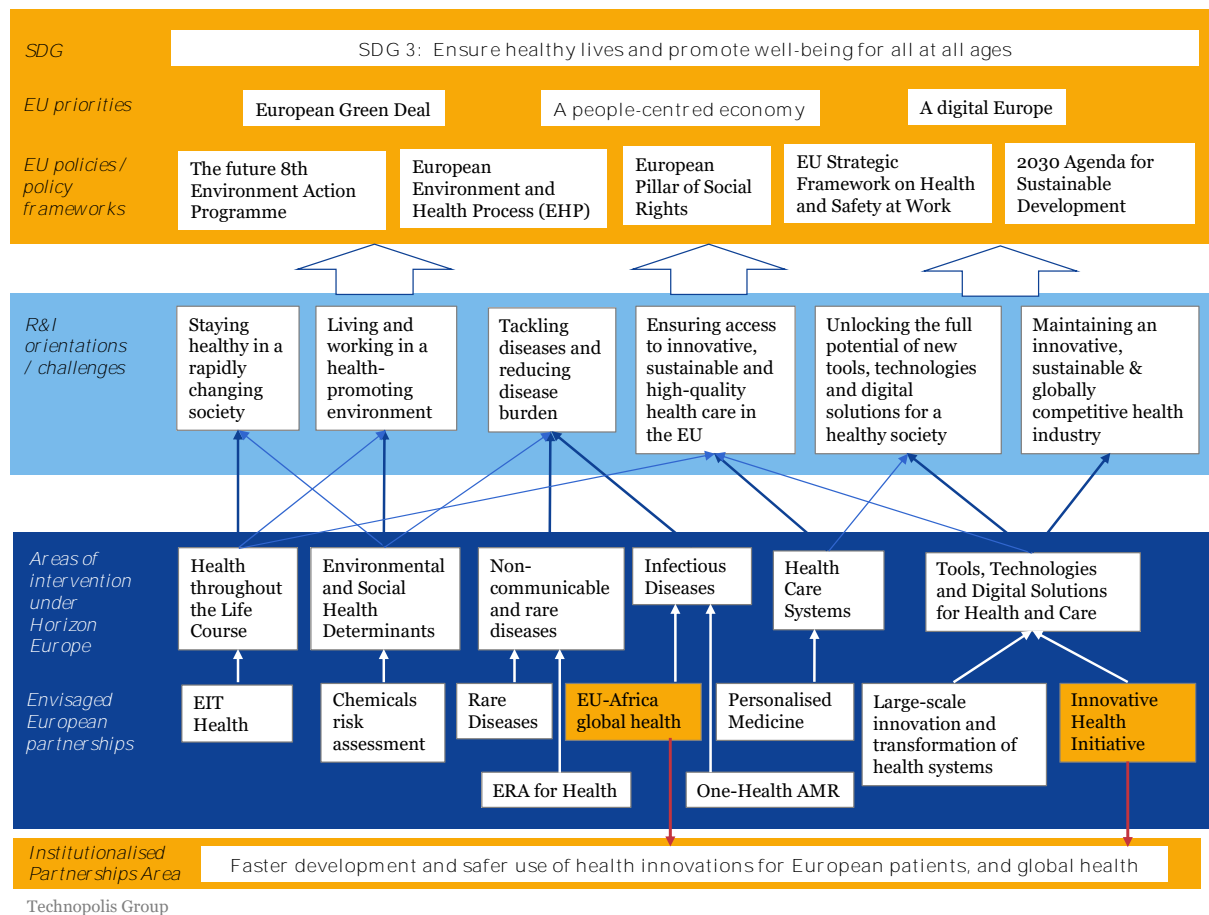
Figure 5, below, shows that the portfolio of envisaged European Partnerships in this cluster¹⁰ aims to contribute to all of the R&I orientations in this cluster. However, there is a pronounced focus on the 'tackling diseases and reducing the disease burden' objective, addressed by five out of the ten partnerships (amongst which there is one candidate Institutionalised Partnership). The objectives focused on an improved exploitation of digital solutions and competitiveness of the EU health-related industry are addressed by two partnerships amongst which one is a candidate Institutionalised Partnership.

In this context, it should be noted that the portfolio of European Partnerships in this cluster predominantly encompasses Co-funded Partnerships, focused on joining the R&I programmes and investments at the national level. There is therefore overall a limited level of involvement of the private sector in the development of the SRIAs (i.e. as partners of the envisaged partnerships), be it from the supply or user side in the value chains. The only exceptions are the Innovative Health Initiative and the EIT KIC Health. European Partnerships also provide limited support for the assessment of environmental and social health determinants, uniquely addressed from a chemical risks perspective.

¹⁰ As proposed in the Horizon Europe 'Orientations towards the first Strategic Plans', dd. December 2019

The description of the interconnections between the partnerships in this cluster and the ones funded in the context of other clusters, provided in the reports of the individual impact assessment studies, sheds more light on this topic.

Figure 5: R&I priorities and higher-level objectives of the Horizon Europe Cluster 1 – Health



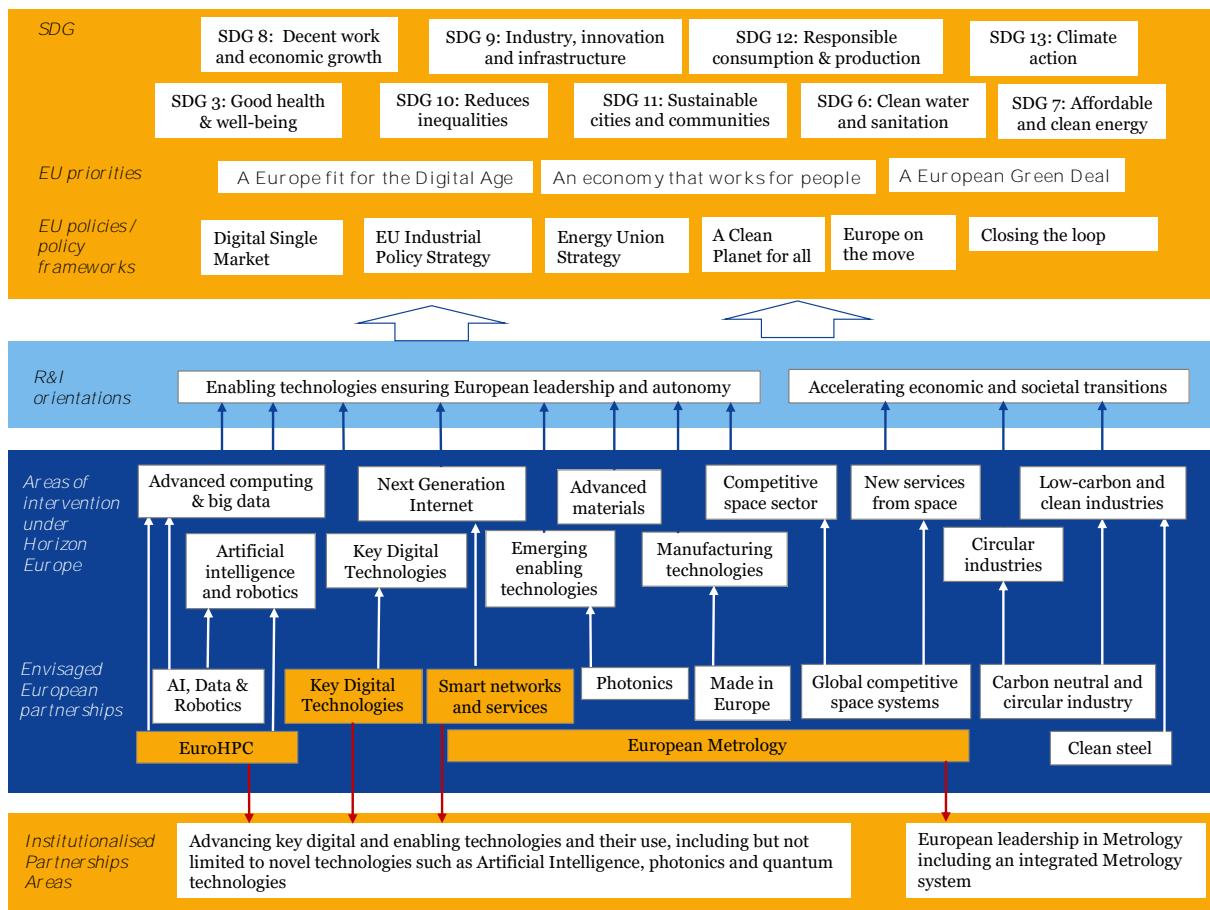
2.3.1 Cluster 4 – Digital, Industry and Space

In this cluster the focus is on the digitisation of European industry and on advancing key enabling, digital and space technologies which will underpin the transformation of our economy and society at large. The overarching vision for R&I investments in this cluster is “a European industry with global leadership in key areas, fully respecting planetary boundaries, and resonant with societal needs – in line with the renewed EU Industrial Policy Strategy.” The expected effects on the European economy and society imply that the R&I activities under this cluster will contribute to various Sustainable Development Goals and respond to three key EU policy priorities: ‘A European Green deal’, ‘A Europe fit for the digital age’, and ‘An economy that works for people’ (Figure 6).

The cluster pursues three objectives: 1) ensuring the competitive edge and sovereignty of EU industry; 2) fostering climate-neutral, circular and clean industry respecting planetary boundaries; and 3) fostering social inclusiveness in the form of high-quality jobs and societal engagement in the use of technologies. A human-centred approach will be taken, i.e. technology development going hand in hand with European social and ethical values.

The key R&I priorities are grouped in two general categories: (I) Enabling technologies ensuring European leadership and autonomy; and (II) Accelerating economic and societal transitions (these will be complemented by priorities of other clusters). European Partnerships envisaged to support the R&I in the specific intervention areas are mainly co-programmed partnerships. Exceptions are the three candidate Institutionalised Partnerships in the digital field and the candidate Institutionalised Partnership in metrology, reflecting their related Partnership Areas.

Figure 6: R&I priorities and higher-level objectives of the Horizon Europe Cluster 4 – Digital, Industry and Space



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Multiple convergences exist between the technologies that are covered in the first strand of the priorities in this cluster, i.e. “enabling technologies ensuring European leadership and autonomy”. In their function of ‘enabling’ technologies, they will also make critical contributions to the attainment of the desired ‘transitions’ in the ‘vertical’ industry sectors targeted in the second strand of priorities in this cluster as well as in the other clusters. A major contribution from this perspective can be expected from the four candidate Institutionalised Partnerships as well as from the ‘Made in Europe’ partnership, focused on manufacturing technologies.

2.3.2 Cluster 5 – Climate, Energy and Mobility

The main objectives of this cluster are to fight climate change, improve the competitiveness of the energy and transport industry as well as the quality of the services that these sectors bring to society. This is supportive of several Sustainable Development Goals including affordable and clean energy (SDG7); industry, innovation & infrastructure (SDG9); sustainable cities & communities (SDG11); sustainable consumption & production (SDG12); and climate action (SDG13). The cluster is most closely aligned to the EU priority for ‘A European Green Deal’ but also has synergy with two of the other five priorities; ‘An economy that works for people’ and ‘A Europe fit for the Digital Age’. This extends across various policies including a Clean Planet for all, the Energy Union strategy, Single European Railway Area, European ATM Master Plan, Single European Sky, and Europe on the Move (Figure 7).

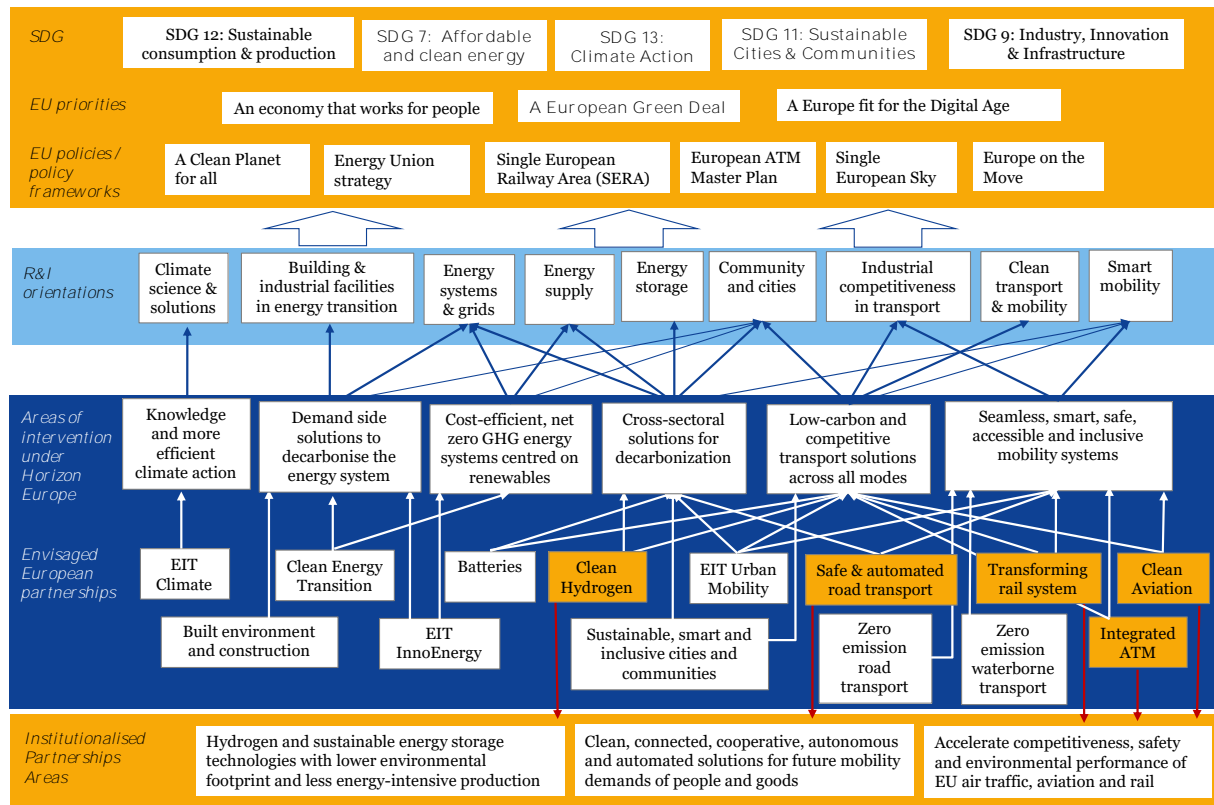
The cluster is directly relevant to several of the areas for possible institutionalised European partnerships on the basis of Article 185 TFEU or Article 187 TFEU, namely:

- Partnership Area 4: Accelerate competitiveness, safety and environmental performance of EU air traffic, aviation and rail

- Partnership Area 6: Hydrogen and sustainable energy storage technologies with lower environmental footprint and less energy-intensive production
- Partnership Area 7: Clean, connected, cooperative, autonomous and automated solutions for future mobility demands of people and goods

Cluster 5 is structured under six areas of intervention under Horizon Europe and nine R&I orientations. Figure 7, below, shows the portfolio of envisaged European Partnerships that are relevant to this cluster and their link to the areas of intervention.

Figure 7: R&I priorities and higher-level objectives of the Horizon Europe cluster Climate, Energy and Mobility



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There are 14 candidate Partnerships that align with this cluster of which eight are possible Institutionalised Partnerships, including five Article 187 initiatives and three EIT-KICs. There are no candidate Article 185 Partnerships in this cluster. The other partnerships are envisaged as either Co-programmed and/or Co-funded Partnerships.

The diagram above shows the strong orientation of the possible Institutional Partnerships towards the mobility area and more limited direct synergies between the envisaged Partnerships and the 'climate science & solutions' priority. Of course, the climate change challenge underpins the whole of this cluster, except where the focus is on industrial competitiveness, but this will also be at least partially dependent on innovation related to clean energy and mobility products and services.

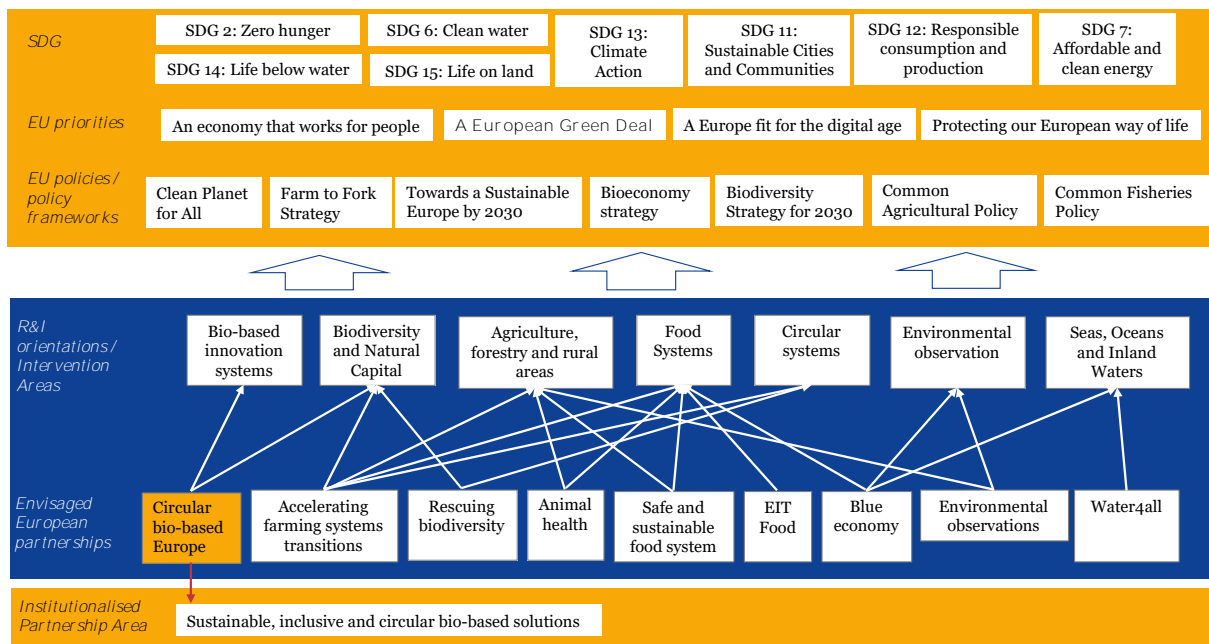
2.3.3 Cluster 6 – Food, Bioeconomy, Natural Resources, Agriculture and Environment

The key objective of Cluster 6, 'Food, Bioeconomy, Natural Resources, Agriculture and Environment' is to advance knowledge, expand capacities and deliver innovative solutions to accelerate the transition towards the sustainable management of natural resources (such as biodiversity, water and soils). The cluster has a large realm and aims to address a wide range of challenges relating to climate change, biodiversity and ecosystems, natural resources, and the production and consumption patterns that may affect them. It encompasses a single area for possible institutionalised European Partnerships aimed at the development of "sustainable, inclusive and circular, bio-based solutions".

The R&I activities funded under the Pillar II Cluster 6 contribute first and foremost to the ‘European Green Deal’. More precisely, they will be instrumental to the announced climate change actions, the Biodiversity Strategy for 2030, the “Farm to Fork Strategy”, the zero-pollution ambition, the New Circular Economy Action Plan, and the comprehensive strategy on Africa and trade agreements. However, through cooperation with the other clusters, Cluster 6 may make some contribution to the other EU overarching policy priorities. The R&I activities funded under this cluster therefore aim to contribute to the achievement of several United Nations SDGs including: SDG 2: Zero hunger; SDG 6: Clean water and sanitation; SDG 7: Affordable and clean energy; SDG 11: Sustainable cities and communities; SDG 12: Responsible consumption and production; SDG 13: Climate action; SDG 14: Life below water; and, SDG 15: Life on land.

Cluster 6 is structured around six targeted impacts and seven research and innovation orientations, as shown in Figure 8, below. The R&I activities funded under this cluster aim to (1) develop solutions for mitigation of, and adaptation to, *climate change*; (2) halt the *biodiversity* loss and foster the restoration of *ecosystems*; (3) encourage the sustainable (and circular) management and use of *natural resources*; (4) stimulate inclusive, safe and health *food and bio-based systems*; (5) a better understanding of the determinants of *behavioural, socio-economic and demographic changes* to accelerate system transformation; and, (6) improve solutions for *environmental observations and monitoring systems*.

Figure 8: R&I priorities and higher-level objectives of the Horizon Europe Cluster 6 – Food, Bioeconomy, Natural Resources, Agriculture and Environment



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The European Commission envisages nine partnerships under Cluster 6, two of which would be institutionalised (Circular bio-based Europe and EIT Food), four would be either co-programmed or co-funded (Animal Health; A climate-neutral, sustainable and productive Blue Economy; Safe and Sustainable Food Systems for People, Planet and Climate; Water4All), and three would be co-funded (Accelerating Farming System Transition; Agriculture for Data; Rescuing Biodiversity to safeguard life on Earth).

There is seemingly a good balance between the three types of partnerships. However, industry may have some interest in being involved in the design of the Strategic Research and Innovation Agendas regarding living labs and other research infrastructure (‘Towards more sustainable Farming’ envisaged partnership) to develop solutions for accelerating the transition of farming systems, and technologies to collect agriculture data.

The proposed portfolio of European Partnerships covers the full range of R&I orientations under Cluster 6.

All but one of the proposed partnerships contribute to orienting R&I activities towards the development of food systems that will ensure both sustainable and healthy diets and food and nutrition security for all. The food system has an impact on several challenges. It directly relates to nutrition and diets, access to food, food security, and has an influence on the use of natural resources, water and soil pollution, climate change. Food waste is a key component of circular systems and biomass has strong potential to offer bio-based energy solutions. Finally, the transformation of food systems should take into consideration demographic changes and the accelerating urbanisation (which reduces lands available for food production but offers opportunities for new types of agriculture such as urban farming).

Two R&I orientations are covered by less than half of the proposed partnerships: Environmental Observations (even though achievement in this area could make significant contribution to the other areas) and Bio-based innovation systems (which is nevertheless at the core of the candidate institutionalised partnership for a circular bio-based Europe).

Part I. Impact Assessment Studies for the Candidate Institutionalised European Partnerships

14. Candidate Institutionalised European Partnership for Innovative SMEs

Authors

Viola Peter, Stephan Kreuzer, Alberto Domini, Thorben Strähle



Abstract

This document is the final report of the Impact Assessment Study for the candidate Institutionalised European Partnership Innovative SMEs under Horizon Europe. The study was conducted by Technopolis Group from July to December 2019. The methodological framework reflects the Better Regulation Guidelines and operationalises the selection criteria for European Partnerships set out in the Horizon Europe Regulation.

The initiative is envisaged as a continuation of the Eurostars 2 programme which is managed by the Eureka network. The initiative focuses on international collaborative R&D of innovative companies, facilitated through a network of national funding organisations as included in the Eureka network. The funded projects are bottom-up and involve small numbers of project partners. The candidate partnership addresses a niche issue namely limited opportunities for international bottom-up collaboration. The partnership provides thus an opportunity for SMEs for international R&D collaboration but does not address specific technological, social, or environmental challenges. Its main objective is to improve the competitiveness of European SMEs through collaborative funding.

The study concluded that a co-funded partnership is the preferred option for the implementation of this initiative.

Executive Summary

This document is the final report of the Impact Assessment Study for the candidate Institutionalised European Partnership on Innovative SMEs under Horizon Europe. The study was conducted by Technopolis Group from July to December 2019. The methodological framework for this study reflects the Better Regulation Guidelines and operationalises the selection criteria for European Partnerships set out in the Horizon Europe Regulation.

The context

This candidate partnership for Innovative SMEs aims to build upon and expand the activities of the Eurostars 2 programme, which is managed by the EUREKA Secretariat.

The programme supports cross-border research and innovation (R&I) collaboration among SMEs, large firms, and research and academic institutions based in the 34 Eureka participating countries. The European Union funds the programme with a specific budget allocated to 'Innovation in SMEs' under the Industrial Leadership Pillar of Horizon 2020.

When Eurostars 1 was launched in 2008, to be implemented by EUREKA, the aim was to support European SMEs through a dedicated programme for international collaborative research and innovation projects while reaching a higher level of coherence between national funding organisations. Since then, limited coherence among the national funding organisations has been achieved but given the reluctance to change national rules and procedures substantially, further alignment is not planned.

Today, the challenges faced by SMEs can be technological, economic, societal or environmental, such as digital transformation, globalisation of value chains, changes in the workforce population and demand for energy efficient products and services.

Problems and drivers

European SMEs have common difficulties, such as scaling up, entering international markets, hiring skilled personnel and accessing knowledge.

The 2002 Barcelona target to increase R&D investment to 3% of GDP is far from being reached and levels of cross-border investments are low, especially following the 2007-09 financial crisis. The opportunities for bottom-up, cross-border collaborations are limited and SMEs struggle to find the most suitable instrument; there is a wide array of EU and national support programmes for research and innovation, the latter of which vary greatly across EU Member States and often limit their support to collaboration among partners within the same Member State.

Objectives and functionalities

In this context, the candidate partnership supports innovation-driven SMEs in participating in international, collaborative R&I projects with other innovative firms and research-intensive partners.

The partnership's objective is to increase the competitiveness of European SMEs by fostering their involvement in international collaborative research and innovation projects – an avenue to facilitating their entry into global value chains and accessing knowledge transfer. In order to address the highly skewed participation by Member States under Eureka 1 and 2, the candidate partnership aims to attract further financial commitment from a wider range of countries.

Economic and technological objectives are expected to be achieved through the near-market research and innovation support provided through the partnership. By funding the

development of new energy-efficient products, processes or services, the partnership is also expected to have a positive impact on society and the environment.

Policy options

Even though the baseline option (calls under Horizon Europe) is evaluated as the most efficient, effective and coherent option, it does not provide for bottom-up, multi-beneficiary projects.

Our conclusion is that the co-funded partnership is the preferred option as it maintains the bottom-up character (which is particularly appreciated by beneficiaries), is more cost efficient than the current institutionalised partnership under Art. 185 TFEU, and it is suited to the limited ambition with respect to addressing further the coherence of national funding rules. It also shows a particularly high level of flexibility in terms of activities and services.

Résumé exécutif

Ce document est le rapport final de l'étude de support à l'analyse d'impact de la proposition de partenariat européen institutionnalisé pour les petites et moyennes entreprises innovantes dans le cadre d'Horizon Europe. Cette étude a été menée par Technopolis Group entre juillet et décembre 2019. Le cadre méthodologique de cette étude tient compte des lignes directrices pour une meilleure réglementation et opérationnalise les critères de sélection des partenariats européens définis dans le règlement d'Horizon Europe.

Contexte

Le partenariat proposé pour les petites et moyennes entreprises (PME) innovantes a pour but de développer les activités du programme Eurostars 2, qui est géré par le Secrétariat EUREKA, tout en en tirant profit.

Ce programme soutient la collaboration transfrontalière en matière de recherche et d'innovation (R&I) entre PME, grandes entreprises, institutions universitaires et centres de recherche basés dans les 34 pays participant à Eureka. L'Union européenne finance ce programme avec un budget spécifique alloué à « l'Innovation dans les PME » dans le cadre du pilier Primauté industrielle d'Horizon 2020.

Quand Eurostars 1 a été lancé et sa mise en œuvre confiée à EUREKA en 2008, l'objectif était de soutenir les PME européennes grâce à un programme dédié de projets collaboratifs et internationaux de recherche et d'innovation, tout en assurant une meilleure cohérence entre les organismes de financement nationaux. Depuis lors, une cohérence limitée au sein des organisations nationales de financement a été atteinte. Étant donné la réticence à un changement significatif des règles et des procédures nationales, un alignement plus poussé n'est cependant pas à l'ordre du jour.

Actuellement, les difficultés rencontrées par les PME peuvent être de nature technologique, économique, sociétale ou environnementale, comme la transformation numérique, la mondialisation des chaînes de valeur, les changements dans l'effectif et la demande pour des produits et des services à haut rendement énergétique.

Problèmes et facteurs

L'expansion, l'arrivée sur des marchés internationaux, l'engagement de personnel qualifié et l'accès aux connaissances sont des difficultés communes aux PME européennes.

Or, l'objectif défini lors du sommet de Barcelone en 2002 d'augmenter les investissements en R&D à 3 % du PIB est loin d'être atteint et les niveaux d'investissements transfrontaliers sont faibles, surtout suite à la crise financière de 2007-09. Les opportunités de collaborations transfrontalières sur des thématiques définies par les bénéficiaires eux-mêmes sont limitées et les PME ont du mal à trouver l'outil le plus adapté. Il existe en effet toute une série de programmes de soutien nationaux et européens pour la recherche et l'innovation. Toutefois, les programmes nationaux varient grandement d'un État membre à l'autre et limitent souvent leur aide à une collaboration entre partenaires au sein du même État membre.

Objectifs et fonctionnalités

Dans ce contexte, le partenariat proposé soutient les PME axées sur l'innovation en les faisant participer à des projets de R&I collaboratifs et internationaux avec d'autres entreprises innovantes et partenaires avec des activités de recherche.

L'objectif de ce partenariat est d'augmenter la compétitivité des PME européennes en les encourageant à participer à des projets de recherche et d'innovation collaboratifs et internationaux, un moyen de faciliter leur entrée dans les chaînes de valeur mondiales et d'accéder au transfert de connaissances. Afin de remédier aux grandes divergences de

taux de participation entre les États membres dans le cadre d'Eurostars 1 et 2, le partenariat proposé devra attirer d'autres engagements financiers d'un éventail plus large de pays.

Ce partenariat devrait atteindre ses objectifs économiques et technologiques par le soutien aux activités de recherche et innovation proches de la mise sur le marché. En finançant le développement de nouveaux produits, processus ou services à haut rendement énergétique, le partenariat devrait également avoir un impact positif sur la société et l'environnement.

Options stratégiques

Bien que l'option de base (appels à projets dans le cadre d'Horizon Europe) soit considérée comme étant la plus efficace, rentable et cohérente, elle ne prévoit pas de projets multi-bénéficiaires participatifs.

Nous en avons conclu que le partenariat cofinancé était donc l'option à favoriser, car il ne contraint pas thématiquement les bénéficiaires (ce qu'ils apprécient particulièrement) et il est plus rentable que le partenariat institutionnalisé actuel au titre de l'article 185 du TFUE. Par ailleurs, il convient à l'ambition limitée en vue d'assurer une meilleure cohérence des règles de financement nationales. Enfin, il présente un niveau particulièrement élevé de flexibilité en termes d'activités et de services.

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Glossary

BERD	Business expenditure on research and development
CIS	Community Innovation Survey
CSA	Coordination and support actions
EC	European Commission
EIC	European Innovation Council
ERA	European Research Area
ESE	The Eureka association
FP	Framework Programme
GA	Grant Agreement
H2020	Horizon 2020
IA	Impact Assessment
ICT	Information and Communication Technologies
IPR	Intellectual Property Rights
MFF	Multi-annual Financial Framework
PCT	Patent Cooperation Treaty
RDI	Research, Development, Innovation
R&D	Research and Development
RIA	Research and innovation action
PRO	Public Research Organisation
SDG	Sustainable Development Goals
SRIA	Strategic Research and Innovation Agenda
TFEU	Treaty of the Functioning of the European Union
UN	United Nations
WIPO	World Intellectual Property Organisation

1 Introduction: Political and legal context

This document presents the impact assessment study of the Candidate Institutionalised Partnership Innovative SMEs, which is one of the initiatives planned to implement the Commission's vision for the period beyond 2020 under the Horizon Europe Pillar III. It is the envisaged European Partnerships in the Partnership Area entitled 'Innovative and R&D intensive small and medium-sized enterprises'.

The impact assessment takes note of a proposal for a new 'Innovative SME' proposal, which was submitted to the European Commission by the Eureka association (ESE). The current Eurostars 2 partnership is thus taken into account as a baseline for a new potential institutionalised partnership.

In this section, we set out the challenges, the competitive setting and the EU priorities relevant for the candidate partnership entitled 'Innovative SMEs'.

1.1 Emerging challenges in the field

1.1.1 Technological trends

Europe's industry and businesses are affected by *global technological trends* such as the digital transformation, advanced manufacturing, artificial intelligence and Blockchain. A key question in assessing the impact of the candidate partnership is if a bottom-up programme akin to the predecessor Eurostars programmes is able to adequately identify and give a boost to such technological trends. The bottom-up principle tends to favour the key R&D strengths and established technological trajectories put forward by established companies and thus may continue to support well established technologies rather than disruptive technologies developed by start-ups.¹

One technological trend that may specifically affect demand for the new partnership is the rise of cloud computing and open science databases which, taken together, make cross-border R&D ever easier to implement.

1.1.2 Economic trends

The main *global economic trends* that companies are facing are still globalisation and digitisation and their various effects on trade and growth potentials.²

As for globalisation, SMEs increasingly operate on a global scale and are integrated into global value chains of production and service delivery. SMEs that are not integrated into such value chains are often not able to reap the benefits of a global division of labour in terms of increased productivity and a larger customer base. Cross-border RDI can play a role in providing SMEs with access to new markets and value chains, especially when these projects focus on close-to-market innovation.

While access to finance is no longer the most important challenge, many SMEs struggle with financial issues that influence their growth options, including hiring skilled personnel, expanding to foreign markets and upscaling, and their opportunities to perform R&D in-house or through external collaboration. An instrument such as the candidate partnership

¹ SMEs tend to focus on incremental innovation rather than radical innovation (Watty 2013). Given the need of trust for collaboration among businesses (Bleeke and Ernst 1993) and the ever present risk of unwanted knowledge spillovers (see Manhart and Thalmann 2015), it is likely that new national or international collaborations centre around less strategic/innovative research questions. A bottom-up programme without further specific selection criteria is thus an interesting means for companies to expand on their core products/processes/services.

² OECD 2019a: Economic Outlook, 2019, Vol. 2

offers opportunities to innovative SMEs to engage in international collaborative research and thus to help grow in terms of their knowledge, skills and innovation activity.

In general, SMEs struggle to take advantage of digitalisation and there is a risk of them falling behind large corporates that have the in-house resources to invest in this area. A long-term risk would be a two-tier economic structure with a few firms reaping the benefits of digitalisation and the large majority of enterprises stuck with low productivity³ and revenue growth.⁴ To remedy this, scaling-up finance can help SMEs bring their innovations to the market faster, boosting their competitiveness and allowing them to grow.

A factor to consider in the context of this intervention is its contribution to the further integration of the EU's Single Market. In particular, the EU aims to complement the Single Market of goods, services with a **Digital Single Market** by boosting the digital industry, building a European data economy, improving connectivity and access to broadband and wireless internet and advancing in digital science and infrastructure.⁵ Fostering cross-border R&D collaboration can play a supportive role: the current market fragmentation and an uneven geographic spread of innovation hinder firms' abilities to quickly scale up innovations and disseminate them across sectors and countries. Both could be attenuated through more cross-border R&D cooperation.⁶

1.1.3 Societal trends

One of the biggest societal trends affecting Europeans is the demographic change and an ageing population.⁷ This may, but does not need to, result in less entrepreneurialism and innovation, which in turn may reduce demand for a programme for innovative SMEs. However, the ageing population already has an impact on the available workforce, the number of graduates, potential researchers and R&D personnel in 20 European countries, especially in eastern Europe.⁸

In the coming years, there may thus be less well-trained and skilled R&D personnel available to fill the relevant occupations in European companies. The shift in *workforce demographics* and its potential impact on labour productivity may therefore pose a challenge. Further to the shortage of the workforce, a shift in required skills is likely to affect SMEs in the near future and to affect them more so than large firms. SMEs are already reporting more often that they struggle to find skilled personnel.⁹ They compete with large firms for talents not only with the latest scientific and technical skills, such as in artificial intelligence, but also for those with business and cooperation skills. They often face the difficulty of not being located in the vicinity of universities and pay lower salaries than larger firms. Training and up-skilling are less common in SMEs. This trend may make it even more important for SMEs to engage in cross-border, multi-partner RDI (research, development, innovation) projects to overcome their lack of in-house skills, but at the

³ OECD. (2019) Digitalisation and productivity: A story of complementarities. OECD Economic Outlook. Available at <https://www.oecd.org/economy/growth/digitalisation-productivity-and-inclusiveness/>

⁴ OECD. (2018) Promoting innovation in established SMEs. Policy Note for SME Ministerial Conference. Available at <https://www.oecd.org/cfe/smes/ministerial/documents/2018-SME-Ministerial-Conference-Parallel-Session-4.pdf>

⁵ <https://ec.europa.eu/digital-single-market/en>

⁶ European Commission, 2018, Science, Research and Innovation Performance of the EU 2018 Key findings, p. 18

⁷ https://ec.europa.eu/info/news/economy-finance/policy-implications-ageing-examined-new-report-2018-may-25_en

⁸ <https://www.bloomberg.com/news/articles/2019-07-15/aging-population-to-cut-east-europe-deeper-than-west-imf-says>

⁹ <https://www.eurocommerce.eu/media/143276/European%20SME-Action%20Programme.pdf>

same time also restricts their capacity to do so if lack of skilled staff limits their business growth potential.

1.1.4 Environmental trends

Climate change and other environmental issues rapidly increase the demand and urgent need for innovation and can only be tackled internationally, making cross-border R&D more important than ever. The issue will surely gain importance under the new Commission (as per the outline of its political priorities). The European Commission is making the circular economy, sustainable agriculture, renewable energy and fossil-fuel free transport and housing political priorities.¹⁰ The private sector, and notably the plethora of European SMEs, have a crucial role to play in this regard and will need support to come up with innovative ideas to address these challenges.

Table 1: Overview of the emerging challenges

Social	Demographic aspects – the ageing population in Europe is leading to a reduction in the numbers of people that are part of the skilled workforce. SMEs have more difficulty in attracting a skilled workforce than large firms.
Technical and technological	European SMEs tend to be laggards in terms of technological developments such as digitisation, AI, cloud computing etc. SMEs are less likely to take them up in a bottom-up, market-oriented programme
Economic	The lack of a skilled workforce and asymmetric innovation capacities and capabilities <i>vis à vis</i> large firms challenge the competitiveness of SMEs. Fragmentation of markets challenges their access and their potential to grow.
Environmental	Environmental agendas may only play a minor role in a bottom-up, non-thematic programme. The coordinated and collective effort required to address environmental issues is not a mechanism provided for in a bottom-up programme.



Open public consultation

In the public consultation, companies – SMEs and large companies – pointed out the gap in terms of scaling up SMEs. Among all the problems identified, it received the highest share of agreement and this is also key in terms of expected impacts to be delivered by the partnership. A second problem for SMEs is limited public-private collaboration. Academic/research institutions identified a 'Lack of understanding of/or knowledge about scaling SMEs' as a main problem – three quarters of the respondents found this 'very relevant'. For this stakeholder group, the limited public-private collaboration comes second – roughly 60% found this 'very relevant'.

In terms of the take-up of innovations and a lack of digitalisation – almost half of the companies were neutral about its relevance with regard to being chosen as a candidate partnership whereas all other main stakeholders thought, as a majority, that this is relevant or very relevant.

In terms of barriers to exploitation due to a lack of access to markets, there is broad consensus among all stakeholders that this is relevant or very relevant, although SMEs

¹⁰ https://ec.europa.eu/commission/sites/beta-political/files/rp_sustainable_europe_30-01_en_web.pdf

and large companies see this mainly as a 'relevant' issue. Only one third of the SMEs found this 'very relevant'.

More details were provided through interviewees. Several public authorities, innovation agencies and SMEs pointed out that there is a wide variety of SMEs and that needs, capacities, and capabilities differ a lot. There are certainly SMEs that do not have the internal capacities to perform research on their own. For those, public cooperation programmes with universities and other types of research institutions help them in their innovation process.

Access to new skills and competences is particularly mentioned by public authorities. They point out the potential of cross-border collaboration among innovative, R&D intensive companies in terms of sharing/acquiring new skills. In terms of research actions that require a high level of digitalisation, very small enterprises in particular need the support of other institutions such as research and technology organisations or competence centres.

In terms of competences to access public funding for innovation, national innovation agencies point out the substantial lack of knowledge and competences within SMEs to apply to the EU programmes.

1.2 *EU relative positioning*

1.2.1 Competitive positioning of Europe in the field

Given that 'Innovative SMEs' can be found in all industries, one may compare Europe's technological and scientific performance relative to the world or its main competitors. With regard to the sectors and topics supported by Eurostars 2, projects are predominantly grouped in the areas of biotechnology, general industry, ICT, environment and energy. In these areas, Europe shows a mixed picture in terms of technological specialisation. Based on the shares of international patent applications (so-called PCT patents) at the World Intellectual Property Organisation (WIPO) over time, one can see that Europe is less specialised than the US, Japan, Korea, and China in Information and Communication Technologies (ICT). In 2014, the US had the highest shares in biotechnology while Europe was above the world average in the area of environmental technologies and also in the broad area of 'other technologies' (see Appendix D Table 22). Over the years, Europe's absolute specialisation pattern has seen a number of shifts which are affected by worldwide absolute patent trends, sectoral effects and country effects.

Since patenting trends are changing gradually, one can observe over almost two decades decreases in ICT patenting in Europe.¹¹ Innovation performance varies significantly within the EU. Innovation leaders such as Finland, Germany and Sweden put in a strong performance in terms of patent applications while moderate and modest innovators show very low levels of international patent applications. Given that patenting activities in China and Korea are on the rise – while Japan maintains a very high patenting share and the US and Europe have been declining since 2000¹² – one can expect that these trends will not be reversed in the short term. This also means that competition, in particular from Asian innovators, will not fall. Given the often-mentioned low level of internal innovation capacity of a large number of European companies, in particular SMEs, it seems important to provide European firms with the right support in order to maintain a certain level and not lose further ground.

¹¹ Frietsch R. et al (2017): Observed trends in patenting in sectors. JRC Technical Report

¹² EC (2019): Science, research and innovation performance of the EU (SRIP) report

Empirical evidence shows that the distribution of patent applications is highly skewed in terms of company size. A few large companies are responsible for large shares of patent applications.¹³

In terms of scientific profile, Europe and the US have suffered from a tremendous rise in numbers of Chinese publications in the past decade, which meant declining shares for Europe and the US. While the EU's share stood at 33.3% (US 28.6%, China 2.7%) in 2000, the EU's share had dropped to 27.1% (US 19.5%) by 2016, while China's share had risen to 16.7%.¹⁴ The data on the top 10% of highly cited publications indicates that the US is leading in most fields except for automobiles, construction, other transport technologies and security. Similar shares to the US are reached by Europe in the field of energy. In new production technologies, other transport technologies, security and transport, China has the highest shares, while, in automobiles, Japan dominates.

While SMEs have a low propensity to patent, they have an even lower propensity to publish. If they do, then very often it is in the form of co-publications with partners from academia or public research organisations (PROs). In Eurostars 2, 35% of the participants were either an academic partner or from an PRO. According to a survey of beneficiaries one year after completion of their Eurostars 2 project, on average two publications were published.¹⁵

The Eurostars contribution has not been assessed in greater detail. According to the final evaluation of Eurostars-1, Eurostars participants were rather active in terms of patenting and filed on average 1.9 patents more than a control group,¹⁶ suggesting that the participating companies performed better than average. According to the self-reporting of Eurostars-2 beneficiaries, on average 1.2 patents were reported by project.¹⁷

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¹³ See Eurostat (2014): Mapping the contribution of SMEs in EU patenting; see also European Patent Office statistics by country or top applicants per leading field of technology: <https://www.epo.org/about-us/annual-reports-statistics/statistics.html>

¹⁴ EC (2019): Science, research and innovation performance of the EU (SRIP) report

¹⁵ Data provided by ESE. Based on 168 projects (out of a total of 1,099) and 344 responses from participants. This question has only been introduced in the follow-up survey recently and is thus not available for projects which were funded and ended earlier. The question in the reporting is, however, not addressed to the respondent's output but to the project level. It is thus not clear if two participants (i.e., survey respondents) from one project refer to one and the same publication as output or more.

In other industrial partnerships, the figures are also not particularly high and yet, by analysing publications included as outputs of funded projects within the partnerships, one can first analyse that - depending on the partnership - between 5-50% of the funded projects published scientific articles. Those who published had between 2 and 15 publications on average. The higher numbers can be found predominantly in partnerships with a large share of public research organisations.

¹⁶ Makarow, M. et (2014): Final evaluation of Eurostars.

¹⁷ Based on 168 projects that have reported. Data: ESE. The question has only been introduced recently and is thus not representative for Eurostars 2 projects.

¹⁸ Data provided by ESE. Based on 168 projects (out of a total of 1099) and 344 responses from participants. This question has only been introduced in the follow-up survey recently and is thus not available for projects which were funded and ended earlier. The question in the reporting is however not addressed to the respondent's output but to the project-level. It is thus not clear if two participants (ie., survey respondents) from one project refer to one and the same publication as output or more.

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1.2.2 Support for the field in the previous Framework Programme

Support under Horizon 2020

Under the Horizon 2020 (H2020) Framework Programme, SMEs were able to participate in several instruments. This includes the various **thematic partnerships, thematic collaborative research projects** as well as specific areas with the **Eurostars 2** partnership and the **SME Instrument**.

So far, almost 11,000 SMEs have benefitted from H2020 participation. They have received €6.8 billion worth of EU contributions in 22,000 participations.¹⁹

Eurostars 2

The **Eurostars 2** partnership is based on Decision 553/2014/EU, in which Recital (1) refers to the Europe 2020 Strategy (2010) and the mentioned need to develop favourable conditions for investment in knowledge and innovation in order to achieve 'smart, sustainable and inclusive growth'.

The programme is currently jointly undertaken by 34 Eureka members and, as a full member, the European Union is represented by the European Commission. Carrying on from its predecessor initiative (Eurostars 1), **Eurostars 2 has no specific scientific or technological focus but supports cross-border RDI collaboration** among SMEs, large firms and educational and academic institutions from the realm of the Eureka participating countries²⁰ that opted into this specific programme.

For the period 2014-2020, the European Union financially supports the Eurostars 2 programme with a maximum of €287 million. The budget comes from the Horizon 2020 budget allocated to 'Innovation in SMEs' (Industrial Leadership pillar). The European Union contribution is equivalent to one third of the effective contribution of the participating states (for both operational and administrative expenditure). It may increase to a maximum of half of the contributions of the participating states.²¹

SME instrument

SME support in Horizon 2020 was also provided through the **SME Instrument**. This instrument was available from 2014 to 2018 under this title. Changes to the Work Programme 2018-2020 of Horizon 2020 provided for the discontinuation of the so-called 'Phase I SME Instrument' (last applications: 5 October 2019). The 'Phase 2 SME Instrument' continues through the so-called 'EIC Accelerator'. The latter provides grants, blended finance and equity. The instrument offers bottom-up calls for single beneficiaries.

From 2014-2019, 3,710 projects benefitted from the SME phase 1 instrument. The total amount spent on this amounted to €185 million. For the SME phase 2 instrument, 1,038 projects benefitted from an EU contribution of €1.75 billion (see Appendix D Table 23).

between 5-50% of the funded projects published scientific articles. Those who published, had between 2 and 15 publications on average. The higher numbers can be found predominantly in partnerships with a large share of public research organisations.

¹⁹ Horizon 2020 Interactive Dashboard. Accessed 16.12.2019

²⁰ Eureka. 2019. Third EUREKA Eurostars Programme 'Eurostars-3': Building on Impact and Aiming Higher: Vision and request for Article 185 European Partnership under Horizon Europe (2021-2027). Page 1. This document has not been released to the public.

²¹ Decision 553/2014EU, Art. 5

Support outside Horizon 2020

SME support at the EU level is mainly provided through the EU programme for the Competitiveness of Small and Medium-Sized Enterprises (COSME). This €2.3 billion programme has a number of key objectives: it supports SMEs in their efforts to **access finance** within their lifecycle and to **access markets** through the Enterprise Europe Network, the Your Europe business portal and several intellectual property rights (IPR) helpdesks. It further **supports entrepreneurship** through education, mentoring and other support services and, finally, aims to **improve business conditions** by reducing the administrative burden and creating a business-friendly environment.

1.3 EU policy context beyond 2021

SME policy support has been and continues to be a policy priority for the European Commission. For decades, various policy areas have been dealing with SME policies. For example, within the European cohesion policy, maintaining and supporting a broad base of SMEs in the regions is a priority. From an industrial policy perspective, the creation of a business-friendly environment and access to finance is pursued. The new European Commission President, Ms von der Leyen, emphasised in her political guidelines, with its ambition geared towards a people-centred economy, the need to place *“more attention on SMEs which contribute, to a large extent, to job creation in Europe”*. In particular, the desire to further efforts to *“develop financial schemes aimed at supporting SMEs and entrepreneurs”* is explicitly highlighted (see also the report on the overarching context to the impact assessment studies). A new SME strategy is currently being developed at the European Commission level, which will guide the instruments in the next programming period. The strategy will link a new industry policy, the Green Deal and the SME policy in order to have a seamless approach. So far, SME support at the EU level consists of a number of complementary initiatives but with one main goal, namely to strengthen Europe’s industrial competitiveness. The upcoming strategy will, furthermore, provide orientation on priorities. From the research and innovation perspective, collaborative research among firms – and in particular SMEs – is promoted through the last few Framework Programmes. This instrument has been expanded through the ‘Innovation Council’ and the ‘InvestEU’ programme. Among the latter’s key targeted areas, three are particularly important for SMEs, namely ‘research, innovation and digitisation’, ‘small and medium businesses’, and ‘social investment and skills’.

The various EU policies and priorities are also linked to the UN’s Sustainable Development Goals (SDGs). In particular Goal 9, *‘Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation’*, is a goal where the Innovative SME partnership fits in. Other goals such as, *‘Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all’* (Goal 8) or those aiming at energy, mobility or climate change can be equally relevant for these goals in their respective results.

Promoting research, development and innovation (RDI) collaboration between different entities and on a cross-border basis has been an EU ambition ever since the ‘European Research Area’ (ERA) was first announced in 2000.²² In this continuation, the initiative has the potential to contribute to achieve the goals of the upcoming Horizon Europe programme. Under Pillar III ‘Open Innovation’ of the programme, scaling up breakthrough and market-creating innovation with the help of a newly established ‘European Innovation Council’ (EIC) will be the key focus, complemented by the action line of a ‘European innovation ecosystem’ through which the initiative would be promoted and funded. The initiative can contribute to this endeavour by facilitating and strengthening cooperation

²² https://ec.europa.eu/info/research-and-innovation/strategy/era_de

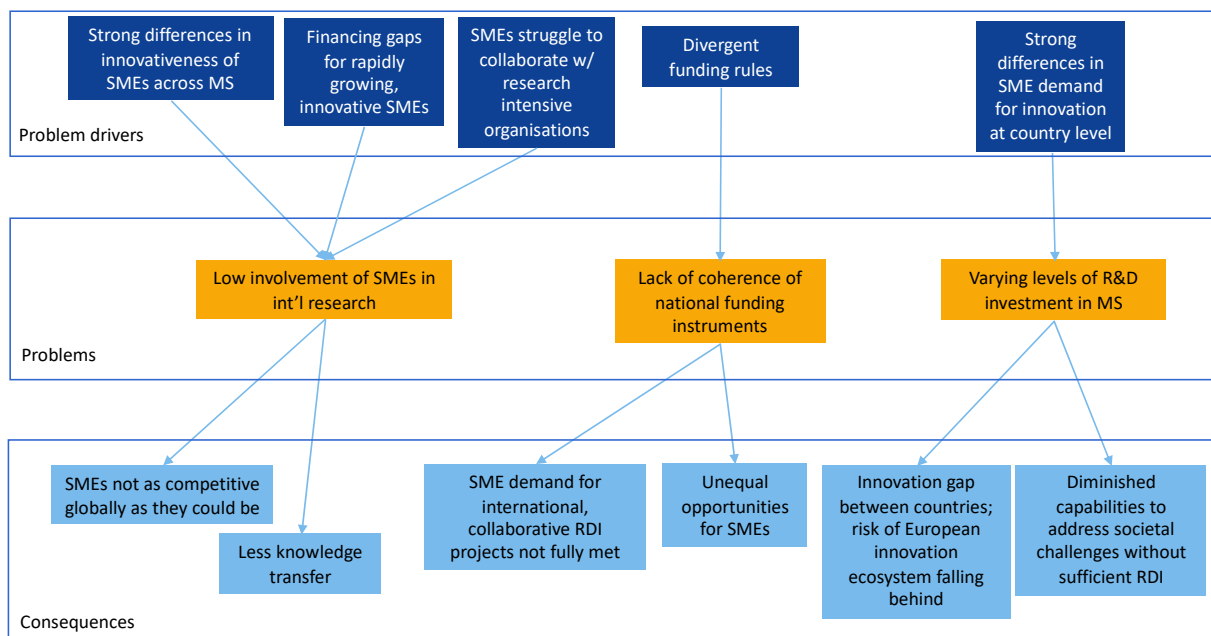
between private and/or public sector partners at an international level. The initiative may also potentially contribute to Horizon Europe's ambition to fully engage the industry in the programme, including small and medium-sized enterprises (SMEs) as one of the main channels through which the programme's objectives are met, specifically towards the creation of sustainable jobs and growth.

2 Problem definition

This section provides a discussion of the problems to be addressed in relation to the emerging challenges presented in Section 1.1, drawing on evidence from desk research and the findings of the stakeholder consultation undertaken as part of this study.

A problem tree portraying related problems, their drivers and consequences is presented in Figure 1 and described in detail in the following sections.

Figure 1: Problem tree for the initiative on/for Innovative SMEs



2.1 What are the problems?

2.1.1 Low level of involvement of SMEs in international RDI projects

SMEs, which form the backbone of the European economy,²³ need access to market, finance, skills and knowledge in order to thrive and compete globally. They often lack the in-house capabilities and capacity to achieve the innovative breakthroughs that are needed for them to scale up internationally and integrate themselves into global value chains. The candidate partnership aims to address these difficulties by providing an opportunity for cross-border research collaboration. This should directly contribute to Horizon Europe's Pillar III objective of scaling up breakthrough and market-creating innovation and in particular to the enhanced development of the European innovation ecosystem.

Many European SMEs lack the in-house capacity and capability to use innovation to improve products or services or to improve production and delivery processes. In some sectors, such as in the chemical industry, the need for international collaboration opportunities is driven not only by the search for new skills and competences, but also by the need to access infrastructure which is missing in the cluster of origin (e.g. for chemical

²³ SMEs represent 99% of all businesses in the EU, providing two thirds of the total private sector employment in the EU. In the past five years, they have created around 85% of new jobs according to the European Commission (https://ec.europa.eu/growth/smes_en)

security). Moreover, many SMEs lack access to the knowhow that is obtained through integration into global value chains involving also research and technology institutes and large firms. Without the respective knowhow, a lot of these companies struggle to carry out RDI projects on their own, even if they come up with innovative ideas independently. Thus, they need to collaborate with external partners to pool resources and jointly conduct RDI projects – in line with the aforementioned principle of Open Innovation. More specifically, cross-border cooperation gives businesses the opportunity to understand foreign markets (in terms of culture, preferences, supply chains, ecosystems) and access specific skills and technologies – particularly in case of collaboration with other/foreign research institutes (as pointed out in interviews with Higher Education Institutes (HEIs)). This need is elevated by an increasing pressure on SMEs to innovate in response to trends such as digitalisation and globalisation.

The interim evaluation of Horizon 2020 indicates that the overall **SME participation in Horizon 2020 has been higher than anticipated (24% rather than the targeted 20%)**.²⁴ However, the Work Programme 2018-2020 for 'Innovation in small and medium-sized enterprises' recognises a need to further promote in particular cross-border collaborative research projects (INNOSUP-01-2018-2020). SMEs face several obstacles with regard to cross-border collaborative research. Apart from lacking the in-house financial resources to engage in such projects, SMEs mention the high costs of participating in support programmes for RDI collaboration projects as an obstacle to their participation.²⁵ Existing programmes tend rather to attract science-based SMEs already experienced in international collaboration than inexperienced ones.

A lack of knowledge about advantages and disadvantages also seems to be a reason for a relatively low participation of SMEs in international collaborative research and innovation projects. The SME Performance Review also mentions the costs of undertaking innovation, lack of internal and external funding, lack of required skills within the business and the complexity and difficulties of accessing public grants and subsidies as problems that innovating SMEs face when wishing to undertake RDI.²⁶

Firms potentially interested in international collaborative R&D tend to already have experience with collaboration at national level. For those not having benefitted from prior national collaboration, the step to go directly to the international level is a big one that is not frequently seen. In particular, small firms are not aware of all the available schemes. The plethora of RDI support instruments makes the identification of the relevant instrument difficult, time consuming and costly for SMEs. In order to increase awareness and make schemes more accessible, funding bodies sometimes go on roadshows or organise matchmaking events for potential funding partners.

In order to be selected for an EU-funded project, any bidding organisation, including SMEs, has to deal with complex and lengthy procedures. Empirical evidence suggest that this is often seen as an administrative burden.²⁷

Whilst there are many **national programmes and instruments** that facilitate the participation of SMEs in RDI projects, most do not explicitly support or focus on

²⁴ https://ec.europa.eu/research/participants/data/ref/h2020/wp/2018-2020/main/h2020-wp1820-sme_en.pdf

²⁵ Faber, J., van Dijk, J., van Rijnsoever F. (2015). Incentives and barriers for R&D-based SMEs to participate in European research programmes: An empirical assessment for the Netherlands, In: Science and Public Policy, 2015, 1–15. Available at <https://academic.oup.com/spp/article-abstract/43/3/414/2363339>, Gilmore, A., Galbraith, B. and Mulvenna, M. (2013) 'Perceived barriers to participation in R&D programs for SMEs within the European Union', *Technology Analysis and Strategic Management*, 25: 329–39.

²⁶ European Commission, 2019, Annual Report on European SMEs 2018/2019, p. 132

²⁷ SME Performance Review, Annual Report 2018-2019, p. 138

international RDI collaboration; in a few member states bilateral calls can be found.²⁸ Both Community Innovation Survey (CIS) data and interview feedback indicate that, in many local innovation ecosystems, universities and enterprises already collaborate on RDI.

The situation for SMEs wishing to engage in RDI projects is made more difficult by the **low levels of cross-border investment** in Europe's Single Market. Data from the European Central Bank shows that financial integration in the Eurozone peaked before the financial crisis in 2008 and has since not recovered to the same level.²⁹ This is problematic insofar as enterprises in countries with insufficiently deep or liquid financial markets may depend on cross-border financing for their RDI projects, which is not forthcoming.

As a consequence, of their low involvement in cross-border RDI projects, **SMEs risk losing out on key innovations**, impairing their global competitiveness as they cannot access global value chains and knowledge is not transferred from research institutes and large firms to them.



Open public consultation

As pointed out by roughly all stakeholder categories – particularly by HEIs and the academia - cross-border cooperation brings advantages and is essential to create innovation, as it allows companies to understand foreign markets (in terms of culture, preferences, supply chains, ecosystems) and create better products by accessing new skills and technologies (especially in case of collaboration with other/foreign research institutes).

Great value is given to international collaboration also by Eurostars 2 beneficiaries, which stress that access to markets is more important for business success than holding new and innovative technological knowledge.

Interviews

Some interviews with national innovation agencies report limited interest for EU-level cross-border collaboration programmes in countries where national programmes offer support to partner with international entities. However, these systematic opportunities are not spread widely within EU countries.

International cooperation is certainly a source of new skills and competences; however, in specific sectors (e.g. the chemical industry) the need for access to infrastructure that is lacking within a given country drives several businesses to seek international partnerships.

Many research-intensive 'born global' SMEs do not need public support for international collaboration. According to innovation agencies and SMEs, the innovative SMEs in several smaller and medium-sized EU Member States as well as the technologically 'hidden champions' all find their ways to collaborate internationally and access foreign markets on their own. For them, a valuable aspect of the Eurostars programme is the possibility to collaborate with countries outside the EU (e.g. South Korea).

As pointed out by interviews with research institutes, not all SMEs have the capacities and internal culture to deal with international networks. Research intensive start-ups may not need cross-border collaborations but sources of funding.

²⁸ Furthermore, a search of the ERAWATCH/Trendchart measures database, which included more than 3,000 schemes, indicated no comparable support measure for SMEs. Interviews with innovation agencies indicated existing programmes only in a few countries (e.g. Spain, Sweden, Germany, Austria)

²⁹ <https://www.ecb.europa.eu/pub/pdf/fie/ecb.financialintegrationineurope201705.en.pdf>

2.1.2 Lack of coherence of national funding instruments

It has long been a cornerstone of EU RDI policy to **strengthen the coherence of national RDI support instruments**. FP7 already stressed “*the importance of SMEs for European growth and competitiveness and thus the need for Member States and the Commission to enhance the effectiveness and complementarity of national and European support programmes for SMEs*”.³⁰ The European Research Area (ERA) also aims to strengthen national research systems and to foster international cooperation³¹ and the Council “*recalled the importance of coordinating national programmes for the development of the ERA*”.³² In order to achieve more integration, the European Parliament stressed that the ERA would be possible only if increasing shares of Union funding were to be allocated with a view to coordinating European, national and regional research policies “*as regards both their substance and their funding*”.³³

When Eurostars 1 was planned and implemented, there was a lack of coordination between national funding bodies, innovation agencies and policymakers, who tended to focus on supporting RDI among firms on a regional or national level without regard for the benefits of international RDI collaboration.³⁴

Since then, more openness and to some degree also more coordination of national programmes has been achieved. There are a range of EU Member States and other bi- or multinational programmes supporting SME-driven RDI projects with a cross-border dimension.³⁵

At the European level, SMEs can participate in other parts of the Framework Programme (thematic priorities, EIC) to perform RDI. On top of that, there are other relevant European and national support programmes targeting SMEs. Between these and national programmes, SMEs thus have a wider choice of schemes than was the case in the past (see Appendix F).

These ambitions notwithstanding, today, **national support instruments, national funding bodies and innovation agencies are still insufficiently coordinated and coherent** in terms of management and financial resources and joint activities (see also section 2.2.4 on divergent funding rules and the stakeholder feedback on that problem driver). This situation leads to an incongruence between nationally focused support instruments with divergent rules on the supply side while on the demand side, there are increasingly globally oriented SMEs that look at international markets to scale up their

³⁰ Council conclusions of 24.09.2004 – referred to in recital 4 of the Decision 553/2014/EU

³¹https://ec.europa.eu/info/sites/info/files/research_and_innovation/knowledge_publications_tools_and_data/documents/ec_rtd_factsheet-era_2019.pdf

³² Council conclusions of 25/26.11.2004

³³ Decision 743/2008, Recital 6,

³⁴ There was no formal impact assessment for Eurostars which would have analysed the supply and demand of programmes at that time. Analysis of the Trendchart database of policy measures (2003-2013) suggests that most collaborative national and regional R&D programmes were not intended to enable international collaboration. There was, however, a remarkable growth in this form of measure over the years. See the analysis of Trendchart policy measures in: EC (2013): Lessons learned from a decade of innovation policy. Report by Technopolis Group.

³⁵ See e.g. IRA-SME.net, a coordination initiative linking ministries and programme owners in DE, BE, AT, CZ, LU, RU, TR and CA. Other countries such as the Netherlands or Sweden maintain bilateral calls. Calls tend to be open either to specific partner countries (e.g. in the German ZIM) or generally open (e.g. VINNOVA ‘Foreign organisations without a branch or establishment/place of business in Sweden may participate in the projects but cannot receive grants’) – in all the cases, the foreign partner must contribute with own funding.

business.³⁶ As a consequence, the public RDI support system may no longer be fit for purpose in its current configuration.

The lack of coherence of national funding instruments poses a problem for SMEs as it means that there are **unequal opportunities in different countries to receive public RDI support**. While SME demand for such funding also varies across countries, there is a risk that their demand is not fully met in some countries.



Interviews

Interviews with national innovation agencies indicated that in some Member States (e.g. France) competitive offers of national funding programmes exist, which makes Eurostars and other EU programmes less attractive for SMEs. In other countries, instead, the national programmes are not offering the same as the EU programmes (e.g. Spain and Italy). In countries such as Austria, Italy, and Spain, EU programmes are generally seen as complementary to the national schemes.

Some interviews with Eurostars 2 beneficiaries in countries so far underrepresented in the programme point out that the administrative burden in terms of the application process and reporting imposed by the national innovative agency is too heavy/too detailed, and not synchronised with Eurostars rules. This may discourage SMEs from participating in the programme.

Across all stakeholder categories is a widespread view that, in order to boost participation rates in EU programmes, there is a need for improved communication and the support of consultants to help with the proposal preparation (in some participating countries more than in others).

2.1.3 Varying levels of RDI investment in Member States

Investment in research and development (R&D) is one of the priorities of the EU to promote the competitiveness and development of European industry and society. In the Barcelona European Council in 2002, the goal of increasing investment in R&D to 3% of GDP was set³⁷ and reaffirmed in the Europe 2020 strategy. Since 2002, the EU's average expenditure in R&D has moved up from 1.7% to 2.07% in 2017,³⁸ still falling well short of the target agreed. While in Sweden (3.33%), Austria (3.16%), Denmark (3.06%) and Germany (3.02%) are above the target of 3%, there are also some countries with intensities below 1%: Romania (0.5%), Latvia (0.51%), Malta (0.55%), Cyprus (0.56%), Bulgaria (0.75%), Croatia (0.86%) and Lithuania and Slovakia (both at 0.88%). This is both a reflection of varying levels of business expenditure for R&D (BERD) of SMEs, the key target group of the candidate partnership, and a lack of public expenditure. These structural differences are mirrored on the EU side: Horizon 2020 competitive funding shares to low performing RDI countries remain low compared to those going to already high performing RDI countries³⁹.

As a consequence of the varying levels of RDI investment across Member States, an **innovation gap persists between European countries**, as showcased by the 'European Innovation Scoreboard' which classifies countries in four categories, from innovation

³⁶ Scaleup Institute Annual Scaleup Review 2018 <http://www.scaleupinstitute.org.uk/scaleup-review-2018/>

³⁷ European Parliament. 2018. Research and Innovation in the EU. Evolution, achievements, challenges. Briefing. Available on [http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/630284/EPRS_BRI\(2018\)630284_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2018/630284/EPRS_BRI(2018)630284_EN.pdf)

³⁸ Eurostat. 2019. R&D expenditure in the EU increased slightly to 2.07% of GDP in 2017. Available on <https://ec.europa.eu/eurostat/documents/2995521/9483597/9-10012019-AP-EN.pdf/856ce1d3-b8a8-4fa6-bf00-a8ded6dd1cc1> August 2019.

³⁹ European Commission (2017), Interim Evaluation of Horizon 2020, SWD(2017) 220, book, p. 119.

leaders down to modest innovators.⁴⁰ Linked to this is the finding that, within the EU, scientific excellence tends to be concentrated in a few countries.⁴¹

Another consequence of varying and often low levels of RDI investment is that this reduces the resilience of the European innovation ecosystem and its capacity to find solutions to societal challenges such as climate change.



Open public consultation

The link between EU support for international SME RDI projects and global competitiveness was confirmed by the responses to the Open Public Consultation,⁴² whereby the majority of respondents (more so in case of academic/research institutions and business associations but also by a majority of SMEs) indicated that a contribution by the candidate partnership to EU global competitiveness in specific sectors/domains was 'fully needed'. A link to addressing societal challenges was also confirmed by a majority of respondents. They found, in particular, the contribution to achieving climate-related goals fully needed whereas the SDGs as such were supported by a smaller group of responses.

In their open responses concerning the main advantages of participating in the candidate partnership, respondents emphasised international cooperation, confirming that they see potential in such a partnership fostering international cooperation.

Furthermore, the majority of respondents regarded the limited collaboration and pooling of resources between public actors and private actors as a very relevant problem to be addressed by the EU's RDI policy.

Interviews

Several interviewees stressed the benefits of international RDI collaboration in providing SMEs with access to skills, technology and knowledge. The needs and challenges faced by SMEs depend on their size and their sector of activity. Although few national innovation agencies claim that SMEs do not necessarily need financial help to innovate, most of the interviewees – particularly direct beneficiaries – point to the lack of funding as one of the main issues hampering internal capabilities for RDI. This is particularly true for SMEs, which – contrary to start-ups, which seek private investments for scaling up – extensively rely on public support (particularly to perform research activities).

Interviews with beneficiaries of the Eurostars programme document that, over the last decade, the availability of funding sources has improved. In particular for widening countries, a better pooling of resources helps.

A few interview partners pointed out that some SMEs may be deterred from such collaborative projects when they fear that larger project partners will exploit their intellectual property rights (IPR) afterwards – despite the fact that this needs to be set out up front in a consortium agreement under Eurostars 2. However, this could have a dampening effect on SME involvement in international RDI projects.

Regarding the complementarity of Eurostars with other EU programmes for entrepreneurship, no other programme is comparable to Eurostars, according to several

⁴⁰ European Innovation Scoreboard 2019. Available on https://interactivetool.eu/EIS/EIS_2.html#a

⁴¹ European Commission (2017), Interim Evaluation of Horizon 2020, SWD(2017) 220, book, p. 119.

⁴² 110 respondents, of which 39% are enterprises, followed by academic and research institutions, business associations and citizens. Sixty-four percent of respondents have been involved in Horizon 2020 and 60% of respondents have been involved in a partnership under Horizon 2020 or FP7.

interviews with SMEs and past beneficiaries. It is the only programme promoting international collaboration while specifically targeting R&D-intensive companies.

2.2 What are the problem drivers?

The key problem drivers affecting RDI performance of innovative SMEs in Europe are discussed in more detail in the following paragraphs. Strong differences in innovativeness of SMEs across MS.

2.2.1 Marked differences in the innovativeness of SMEs across Member States

Data points to marked differences in terms of innovativeness of SMEs across Member States. The aforementioned Innovation Scoreboard shows huge differences between countries in terms of the level of investments by the private sector in innovation (with the best-performing country scoring 20 times higher than the lowest-performing country),⁴³ business R&D expenditure (ratio of 40:1 between the highest- and lowest-performing country),⁴⁴ SMEs with product or process innovations (ratio of 6.76:1),⁴⁵ and SMEs innovating in-house (ratio of 12.74:1).⁴⁶

The SME Performance Review indicates that the share of SMEs that undertook some innovation activity in the 2014-16 period varies significantly across Member States, from 67% in Belgium to 10% in Romania. Likewise, the variance in terms of SMEs that undertook in-house R&D activities in that period is strong, ranging from 75% in Slovakia to 27% in Malta. The SME Performance Review also constructs indices of the R&D and innovation potential of the Member States' SME population. The respective index values for the R&D potential vary from 2.77 in Slovakia to 2.31 in Latvia (EU average: 2.58) and from 4.06 (Ireland) to 3.41 (Greece) (EU average: 3.77) for the innovation potential.⁴⁷

These differences constitute a problem since they threaten to undermine the resilience of the European innovation ecosystem and the coherence of the Single Market, which is why SMEs are a key target group of EU innovation policy.⁴⁸

2.2.2 Financing gaps for growing, innovative SMEs

While access to finance is no longer the most important challenge, many SMEs still struggle with issues impairing their growth prospects, including hiring skilled personnel (which can be costly), expanding to foreign markets and upscaling, and their opportunities to perform R&D in-house or through external collaboration. A survey of SME associations in EU Member States shows that these consider a lack of internal funds and the costs of innovation as the most important reasons why SMEs may *not* undertake any R&D and innovation activities.⁴⁹

Private investors may shy away from funding what are considered innovation-driven projects of a high-risk nature. Interestingly, the survey on the access to finance of enterprises (SAFE survey) suggests that, while access to finance has generally greatly improved for SMEs over the past ten years, SMEs consider access to public financial support

⁴³ Composite index of several indicators, see also: https://interactivetool.eu/EIS/EIS_2.html#

⁴⁴ Measured as: R&D expenditure in the business sector (percentage of GDP)

⁴⁵ Measured as: SMEs introducing product or process innovations (percentage of SMEs)

⁴⁶ Measured as: SMEs innovating in-house (percentage of SMEs)

⁴⁷ European Commission, 2019, Annual Report on European SMEs 2018/2019, pp. 24-32

⁴⁸ https://ec.europa.eu/growth/industry/innovation_en

⁴⁹ European Commission, 2019, Annual Report on European SMEs 2018/2019, p. 138

as impeding the overall availability of external financing to Eurozone enterprises.⁵⁰ This suggests that more could be done to make public financial support a reliable external financing source for SMEs.

Overall, this problem driver should moderately contribute to the problem given that overall access to finance is no longer a prevalent issue for most European SMEs but that, in relation to innovation activities, it can still act as a barrier for many SMEs.



Stakeholder opinion

Interviewees with public agencies in old and new Member States confirm that, in the course of the last ten years, public funding opportunities for SMEs have improved. In some sectors (e.g. the chemical industry) funding has increased, especially for start-ups (with the use of venture capital and blended finance funding schemes). However, while start-ups primarily search for private investors to launch or sustain their business, SMEs tend to search for funding from banking institutes as well as public authorities.

National innovation agencies, however, stress that, according to their experience, SMEs seek public funds mostly for the development of new products, especially in case this implies intensive research activities.

While the criteria for access have not changed significantly, there are now more ways to pool different funding schemes – which is seen as a particularly important option in widening countries.

Nevertheless, interviews pointed to the large variation in SMEs in terms of size, available capacities and needs. While larger SMEs may be capable of funding their international research projects too, smaller ones may need the opportunities provided through public programmes.

2.2.3 SMEs struggle to collaborate with research-intensive organisations

The CIS survey suggests that only a minority of innovative SMEs in the manufacturing sector already cooperate with research-intensive organisations such as private research institutes (only 7%-9% of SMEs in the EU cooperate with such partners), public research institutes (between 6% and 9%, depending on firm size, cooperate with these), universities (between 10% and 17%) (see Appendix E Figure 40). The same survey also reveals that the share of innovative SMEs considering a lack of collaboration partners as an issue of high importance varies greatly between Member States, from over 30% of respondents in Lithuania down to less than 3% in Finland (see Appendix E Figure 41). These differences are reflected in practice in the actual share of innovative SMEs engaged in national and international cooperation, which also varies significantly by firm size and country (see Appendix E Figure 42).

These data suggest that **innovation-driven SMEs across Europe do not always succeed in finding the right research-intensive partners for collaborative RDI projects**, although the gravity of this issue varies significantly by firm size and country. This issue, along with the difference in innovativeness of SMEs across Member States, are strong drivers for the problem of low involvement of SMEs in international research.

2.2.4 Divergent funding rules

Different funding rules on eligibility, funding rates, application procedures and other aspects tend to reflect the evolution of different funding bodies and structures. **Cross-**

⁵⁰ Chart 18, https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/ecb.safe201911~57720ae65f.en.html#toc12

border collaboration is rendered difficult when applicant consortia have to deal with nationally differing funding rules. Such rules are not set in stone but difficult to change substantially. Given that national funding rules are, in many cases, shaped by multiple ministries and funding agencies and that, in many cases, several entities (ministries and funding agencies) are concerned, efforts to align such rules are often considered as not being proportionate at the Member State level when comparing their expected benefits in terms of greater coherence to the adaptation cost incurred by national public authorities.

Funding bodies – be it ministries or agencies – are bound to legislation which provides the legal framework of the execution of public spending programmes. While many processes follow international practices (such as accounting principles), the level of differing *practices* is enormous. Neither the EU nor an intergovernmental organisation such as Eureka, which is implementing Eurostars, can insist on Member States aligning and making their funding rules more coherent.

Over the course of the implementation of the programmes that preceded this candidate partnership, Eurostars 1 and 2, the **Member States have reached a minimum level of rule alignment.** For example, national calls have been synchronised in particular with Eurostars 2 calls and some Member States have improved internal processes, reducing the time to contract. However, systemic barriers to further synchronisation and alignment of rules remain and these are unlikely to be tackled effectively through a funding programme alone. Given that the majority of funding under Eurostars 2 is provided by national bodies, obtaining additional funding from the Union through the partnership seems insufficient as an incentive to introduce legal changes at Member State level to bring funding rules further into line. As long as this remains the case, further alignment will be difficult and divergent funding rules will result in a lack of coherence of national funding instruments.



Interviews

Interviews with public stakeholders showed a rather defensive attitude when it comes to further alignment. Legal provisions were mentioned first and foremost as a reason why national budgets would need to be spent according to national rules – and since the majority of the Eurostars/Innovative SMEs budget would again be national, funding bodies in particular were sceptical about changing existing legal provisions. Before they would have to introduce changes in the legislation, two public stakeholder interviewees from very active countries warned that they would then not participate anymore in the programme.

2.2.5 Marked differences in SME demand for innovation at country level

As indicated in section 2.2.1 above, **the share of SMEs that can be considered innovation-driven varies significantly between countries**, which should also translate into differences in the level of demand for RDI projects. In addition, **the degree to which innovation-driven SMEs wishing to collaborate on RDI projects require external financing differs.** Indeed, the share of innovative SMEs that received public funding for innovation activities ranges, according to the CIS, from 47% in France to 14% in Lithuania. With the exception of a few countries, including Bulgaria and Czechia, in the majority of countries, more innovative SMEs received public funding from national, local or regional sources than from the EU (see Appendix E Table 24).

The **participation rates in Eurostars** also show discrepancies between countries. The programme mainly attracts participants from western European countries. The countries with the highest number of funded projects are Germany, the Netherlands, Switzerland, Sweden and Denmark. Moreover, project consortia tend to be made up of entities from neighbouring countries. The most successful pairs in terms of collaboration are Germany and the Netherlands, Germany and Switzerland, Germany and Austria and Denmark and

Sweden. Over the course of time, there has been almost no progress to obtain higher application rates from widening countries.

Overall, the findings suggest that RDI project collaboration is of interest only to a fraction of SMEs. Their distribution in the EU is highly skewed. This discrepancy is closely linked to the varying levels of R&D investment in Member States. A candidate partnership that aims to contribute to a more coherent and hence resilient European innovation ecosystem will have to raise ambition in terms of scope and alignment of funding mechanisms if it is to achieve a more balanced distribution of participants. Even if this is taken into account, the vast majority of beneficiaries will come from Member States where most companies already have experience of national and international collaboration. **This structural imbalance will not be addressed by the candidate partnership if countries with fewer SMEs seeking to collaborate on RDI projects do not increase their commitments drastically and if their national funding bodies do not introduce changes in their working modes that render them more efficient.**



Feedback on the inception impact assessment

Comments provided on the inception impact assessment confirm that business associations regard international RDI collaboration as a route for European SMEs to scale up and grow sustainably. Some stakeholders welcomed an alignment (and even harmonisation) of national funding rules to facilitate market access for SMEs and reduce fragmentation and inefficiencies in promoting cross-border collaboration.⁵¹

Interviews

The existing diversity of funding rules is assessed differently by different stakeholders: according to interviews with national funding bodies and ministries, they do not find it problematic to use different funding rates for different beneficiaries in a joint research project. They point out that this provides more flexibility for the funding bodies. For example, if their rules provide for a limited funding rate, they can fund more projects. According to opinions expressed in the public consultations as well as in interviews, private sector stakeholders' views are mixed: In the inception impact assessment consultation, some prefer a common set of rules but others point out that this could lead to some partners dropping out of the programme.⁵² The German government would welcome synchronisation of administration going beyond current practice under Eurostars 2.⁵³

Interview feedback provides an indication as to why take-up of Eurostars varies significantly across countries. The high rate of the Dutch participants can be linked to limited funding rates (~25%). With the earmarked budget, the Netherlands are thus able to fund more Dutch participations. According to interviews with funding agencies and ministries, one of the reasons for a lack of demand has been the availability of structural funding. This enables the respective Member States to initiate national support programmes which require less transaction costs (search for partners, application procedures), have a higher success rate and are quicker to start. Furthermore, wider market access – which is one of the main reasons for the establishment of the transnational programme – is simply not envisaged by many locally active SMEs.

⁵¹ E.g.: https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2019-4972378/feedback/F472648_en?p_id=5722277

⁵² https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2019-4972378/feedback_en?size=10&page=2&p_id=5722277

⁵³ https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2019-4972378/feedback/F472454_en?p_id=5722277

A financing gap was not viewed by interview partners as a major problem driving SMEs to collaborate internationally, stressing that multiple funding sources already exist even without the candidate partnership. Some interview partners considered public funding an additional factor motivating SMEs to engage in cross-border RDI projects. Interviewees confirmed that access to new skills and technological capabilities can be a motivating factor for SMEs to engage in collaborative RDI projects.

2.3 How will the problem(s) evolve?

The low involvement of SMEs in cross-border RDI projects limits integration by firms across countries and limits knowledge exchange and international knowledge transfer, with negative consequences for European SMEs' global competitiveness and the resilience of the European innovation ecosystem. Divergent national funding rules and gaps in the level of R&D investment and innovativeness of SMEs between countries aggravate the problem. Given that 10 years after the introduction of Eurostars these problems persist while they have already been addressed in various evaluations, the problem is likely to continue in the future.



Interviews

Interviewees pointed out that SMEs are increasingly looking at international markets from the start of their life cycle. International collaboration is one the one hand facilitated by the increased use of English in the business world, but on the other hand this is also affecting negatively some SMEs where English is less common. Some interview partners also observe a trend of increased reliance on RDI to stimulate business growth among SMEs. Should these trends continue, it could imply an increased demand for international RDI collaboration among innovative SMEs in the future. Identified problems such as for firms finding the right partners and funding such projects may increase in scale too. The interview feedback was mixed as to whether the supply of funding for such projects or the demand due to increased international competition have increased faster over the past 10 years.

3 Why should the EU act?

3.1 Subsidiarity: Necessity of EU action

According to the **inception impact assessment**, the nature and magnitude of the issues suggest that action at EU level is needed rather than the Member States acting alone. **It is pointed out** that the markets alone still do not deliver a sufficient level of RDI investment, particularly for R&D performing SMEs. Market failures create a 'financing gap' where RDI-performing SMEs do not have access to sufficient funds and Member States acting alone will not be able to make the required public intervention. Some Member States' total investments in RDI are comparatively low and do not support cross-border collaboration.

The inception impact assessment further states that there is a need for EU intervention that adds value by having a positive effect on national funding (by leveraging public funding). The EU intervention also needs to encourage stronger integration and alignment, reduce fragmentation and inefficiencies and allow for Member States to jointly support SME cross-border collaboration in R&D.

According to empirical data, a financing gap for funding collaborative research is not a main problem (see section 2.2.2). A lack of cross-border programmes initiated at Member State level still exists, however international collaborative research is provided through the Framework Programme and the inclusion of firms in the collaborative actions has substantially improved in FP7 and H2020. Instruments such as the European Innovation Council (EIC) or InvestEU, which were not in place when Eurostars was launched more than a decade ago, are available. **This means that the candidate partnership may not**

pass the necessity test purely based on the question of whether the problem of access to finance for international RDI collaboration is not sufficiently addressed by other public interventions already.

The request to align and synchronise relevant national research and innovation programmes and thus encourage stronger integration, which was at the core of the Eurostars 1 and 2 programmes,⁵⁴ have delivered some improvements. The previous evaluations acknowledge some degree of alignment, yet they also point out a number of aspects which would benefit from being addressed.

Given that the candidate partnership aims to continue without much change in terms of providing funding for collaborative projects - additional activities are currently discussed - and is not planning a further alignment of national programmes, it is not obvious that further intervention from the EU will lead to measurable effects in terms of competitiveness of European SMEs or strengthen the European innovation ecosystem, given the small share of SMEs benefitting from Eurostars compared with the global population of innovation-driven SMEs. The problem analysis and the assessment of the current vision for Eurostars3 developed by the EUREKA Secretariat suggest that there is a **gap in ambition** between what an ambitious candidate partnership would aim to achieve, not only in terms of addressing SMEs' financing needs, but also in terms of further alignment and integration of national funding instruments, and what is currently envisaged for a Eurostars successor by EUREKA.

3.2 Subsidiarity: Added value of EU action

The EU's added value in entering into a partnership with Member States and associated countries to support RDI in SMEs is based on several factors:

- The predecessor programmes have shown that such an arrangement can **create a leverage effect** whereby the Union and national funding trigger additional private sector funding for SMEs. To date, Union funding for the Eurostars 2 programme has leveraged around four times more in national public and private funding for innovative projects.⁵⁵
- The **EU's involvement can improve coherence** of national SME support and create **directionality of funding** as opposed to disconnected national funding programmes by fostering synchronisation of funding rules and processes.
- Coordinating such a programme at the European level provides project partners, including SMEs, **access to a wider, international network** of a range of organisations involved in RDI projects. It also facilitates knowledge exchange and creates opportunities for mutual learning among national funding bodies and innovation agencies in a coherent framework.

At the same time, the principle of subsidiarity is perhaps of even greater importance in case of Eureka initiatives than in case of other initiatives with EU support given that this intergovernmental network's members include not only the 28 EU Member States but also 12 non-EU countries, alongside four more loosely associated countries.



Open public consultation

Some countries already have effective national programmes facilitating cross-border research akin to what Eurostars offers, whereas others do not. According to interviews with different stakeholders, the situation in Europe is diverse: many small EU

⁵⁴ European Commission, 2017, Interim Evaluation of the Eurostars- Joint Programme, p. 9

⁵⁵ Eureka, Eurostars Annual Report 2018

Member States lack comprehensive and accessible national funding programmes and are thus drawn to Eurostars while others reported that SMEs hesitate to apply since national schemes are closer to the market and have higher success rates than Eurostars. The willingness to apply for Eurostars seems greater when national programmes follow similar procedures to Eurostars' procedures. Eurostars is appreciated as complementary to national funding schemes by most of the stakeholders interviewed.

According to the open public consultation, a gap in scaling up SMEs is the most important problem among the problems to be chosen – almost 60% of all respondents found this 'very relevant'. Limited public-private collaboration is also a very relevant problem for half of the respondents. Comments in the stakeholder consultation from business associations suggest that real innovation takes place in innovative start-ups, which are often better addressed through local ecosystems.

Interviews

The companies currently reached by Eurostars 2 are highly involved in EU R&I activities and are often interested in research outputs per se, but they lack the motivation to further commercialise. Interviews with innovation agencies support the view that only experienced companies take part.

International collaboration is addressed by a number of other instruments which are in particular interesting to widening countries. According to interviews with eastern Member States' authorities, the structural funds provide opportunities and are easier to obtain.

The financial impact of the programme funding to an SME is limited. Several interviewees pointed out that the project funding is only a part of the full costs. For many SMEs, funding is not a problem for small scale research but, in terms of large projects, public contributions are useful.

What seems to be a problem in particular in widening countries is a lack of a tradition of collaboration. Interviewees from widening countries pointed out that this is only gradually changing and European added value for providing international collaboration is exactly for those countries; they need these opportunities which are not pursued much at national level.

In terms of harmonisation, interviews provide mixed views – while a business association suggests that businesses do not necessarily perceive a great need for harmonisation, comments in the public consultation mention that all participants should have to follow the same rules and obtain the same rates and that double accounting should be avoided.

4 Objectives: What is to be achieved?

4.1 General objectives

In order to tackle the problems identified in Section 2, it is important to clarify the objectives of EU action in the field of research and innovation. We have identified three general objectives corresponding to the main problems discussed in Section 2.1.

A new partnership's **key general objective** is to help innovative SMEs to grow and to be successfully embedded in global value chains and new markets. This is to be achieved *through* innovation *via cross-border* collaborative projects promoting excellence in technological research, development and demonstration.

For the candidate partnership, this is a long-term problem which also deserves **long-term commitment**. This in turn would demonstrate to businesses, governments and citizens that investment in RDI is vital to the future economy of Europe. Any intervention would need to be made more coherent with national and other European support programmes and be anchored in Horizon Europe's objectives.

The objective of supporting innovative SMEs with market access directly addresses the problems and needs of SMEs trying to scale up their activities for growing, as described in the problem definition above. By addressing their needs for innovation-driven growth and internationalisation, the objective of the intervention addresses the productivity gap between SMEs and large companies and the aim to improve their competitiveness.

The candidate partnership would thus contribute to the Horizon Europe objectives to foster the competitiveness of Member States, to promote all forms of innovation, to improve the technology base of Europe’s economy and to contribute to the European Research Area and Internal Market coherence.

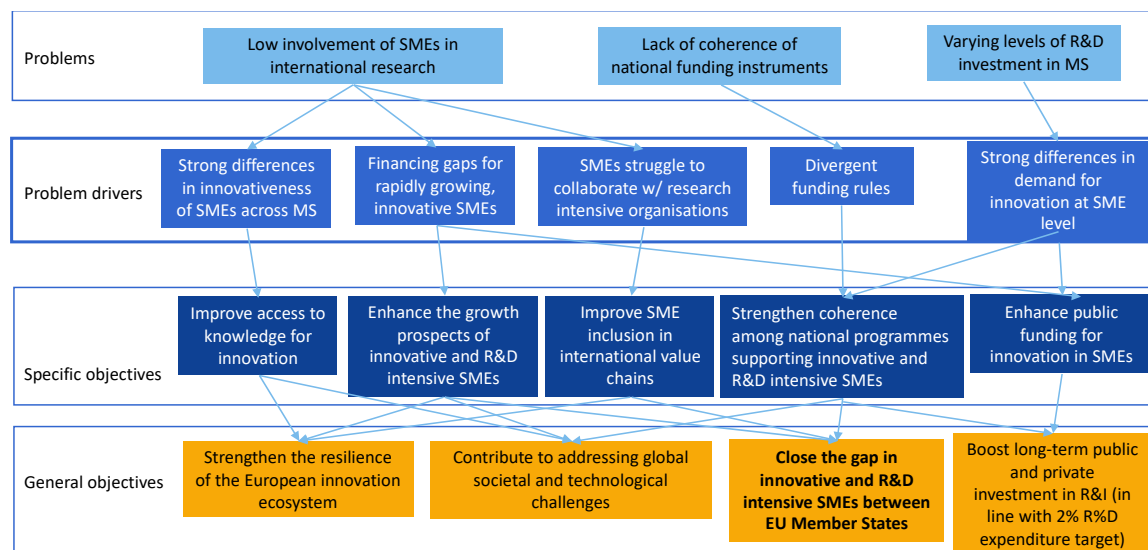
The intervention can be expected to contribute to the following Horizon Europe objectives:

- accelerating industrial transformation;
- strengthening the EU’s technological base;
- creating more and better jobs;
- fostering the competitiveness of EU industry;
- strengthening international collaboration;
- building the European Research Area, in particular in terms of optimal transnational cooperation and the alignment of R&I programming practices across Europe.

4.2 Specific objectives

In order to achieve the general objectives, we defined five specific objectives. These specific objectives respond to each of the problem drivers discussed in Section 2.2. The relationship between the general and specific objectives is shown in Figure 2.

Figure 2: Objectives tree for the initiative on/for Innovative SMEs



4.2.1 Scientific objectives

In terms of scientific objectives, the candidate partnership does not formulate a specific objective. The previous evaluations addressed this issue mainly as practices such as competitive funding and peer review.

Since 2016, the beneficiaries have also been asked about their scientific outputs, namely via the question: 'Please quantify the scientific results of the project on your organisation in terms of peer reviewed articles/ PhD or Masters theses/conferences/press releases.'

Since the candidate partnership is set at the rather applied end of the research process, radical new knowledge should not be expected to be generated. However, there are public research partners involved and one of their core objectives is to publish scientific articles.

Furthermore, within the cooperative research projects, a number of PhD or Masters theses have been conducted, which do not only produce scientific outputs but, through the project-related training obtain new skills. The funded projects thus also contribute to the provision of more skilled graduates.

A specific objective is to improve access to knowledge for innovation. This would be achieved through the collaborative, international projects which lead to mainly tacit knowledge gained by the projects' participants.

4.2.2 Economic/technological objectives

The intervention's specific objectives relate to supporting innovative SMEs in the development of new products, processes and services through funding **bottom-up, near-market, cross-border, RDI collaborative projects** enabling:

- access to new knowledge globally leading to high quality collaborations and mutually beneficial outcomes;
- faster time to market;
- access to new markets or value chains leading to improved market share and sales for innovative SMEs;
- business growth and scale-up globally leading to increased employment and turnover;
- contribution to de-risking SME finance through leveraging of private investment and public funding;
- higher European added value by fostering synchronisation and harmonisation of national support instruments (increasing efficiencies at national level);
- connection to other (national, EU level, Eureka) innovation support schemes, avoiding unnecessary duplication leading to a simplified offer to beneficiaries;
- achieving a more balanced participation of countries in terms of budget and high quality proposals.

4.2.3 Societal objectives (including environmental and social objectives)

Given that the candidate partnership is a bottom-up, non-thematic programme, there are no formulated societal objectives. Obviously, through innovations and new products, societal and/or environmental objectives may be addressed but this is not a deliberate objective. There is clearly a mismatch between the ambition of the instrument of institutionalised partnerships and the bottom-up, non-directing collaborative form proposed by the candidate Innovative SME partnership in relation to societal objectives. The need to address societal objectives – even if this may require to give directions – is supported by potential beneficiaries (see below).



Open public consultation

According to the OPC, the key stakeholders for this candidate partnership are very clear on the objectives: there is broad consensus about the key needs with the statement 'Focus more on the development and effective deployment of technology', which was shared by roughly three quarters of the respondents in companies, business associations, academics/research organisations and public authorities alike. Societal objectives were equally seen as highly relevant. To 'Make significant contributions to the EU efforts to achieve climate-related goals' was thought to be fully needed by about

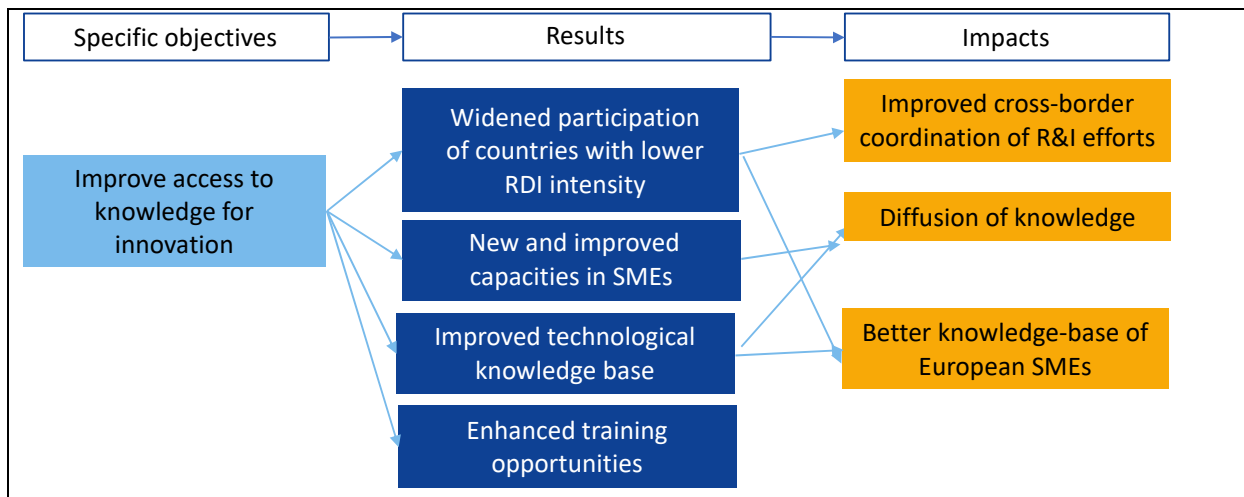
60% of the companies, business associations, academics/research organisations and the public sector alike. While these groups shared their views in most of the needs, there was a small discrepancy concerning 'Responsiveness towards EU policy objectives'. While majorities of academics/research institutions, business associations and public authorities found this 'fully needed', companies – SMEs and large ones – were mainly neutral.

4.3 Intervention logic and targeted impacts of the initiative

4.3.1 Likely scientific impacts

The initiative is likely to lead to three key scientific impacts, as illustrated in Figure 3 and further described on the following page.

Figure 3: Impact pathway leading to scientific impacts



In general, collaborative research projects have different functions for different stakeholders. Companies use collaborative research to gain new knowledge, to widen professional networks, to decide and to 'be in the driving seat' concerning new developments, etc. Firms engage in collaborative research to reach an ultimate goal – to help ideas come to the market. Once they have a marketable idea, they need to protect it from being copied. In order to limit the risk of knowledge leakage, SMEs need to be selective with whom and where to collaborate.⁵⁶

Therefore, companies have an intrinsic wish not to disclose much about the research process. Academics, on the other hand, are valued for their knowledge-sharing and thus are eager to disseminate through publications or attending conferences. Given that scientific publications or going to conferences is not the core activity of companies – in particular not of SMEs-, the tangible scientific impact to produce and disseminate new knowledge of a new partnership, which is mainly made up of SMEs, is likely to be limited.

Nevertheless, the wider inclusion of new organisations – companies and research organisations – provides new collaboration opportunities and thus an extension of professional networks. The collaboration between heterogenous partners (i.e. type of partner) tends to provide heterogenous resources which are conducive to innovation. It can thus be argued that the inclusion of new companies – in particular from widening countries – strengthens their knowledge base and contributes to their competitiveness.

Many of the collaborative projects also provide a basis for including graduate students or postgraduates in order to substantiate their theses. This is an important aspect for

⁵⁶ Sarpong, O. & Teirlinck, P. (2018), 'The influence of functional and geographical diversity in collaboration on product innovation performance in SMEs', *Journal for Technology Transfer*, 43/6, pp.1667-1695.

knowledge and skills generation but equally an important aspect in relation to the access of skilled personnel.⁵⁷

A wider inclusion of public partners (universities and RTOs) can lead to more scientific knowledge which may be disseminated through academic publications but also conferences and press notes. Since, in the case of the candidate partnership, the research is problem-oriented and applied, the new knowledge is equally of an applied nature. This in turn is not considered as material for high-(scientific) impact journals, which tend to be basic research-oriented. It is important that the research collaborations serve the purpose of generating innovations.

This impact pathway leads mainly to tacit benefits at the level of the beneficiaries and only to a limited extent to tangible outputs which can have a wider impact (such as publications). The tacit benefits are, however, important, in particular if they are gained by participants from Member States which are not innovation leaders. The scientific impacts on those – presumably new participants which have otherwise a lack of international research collaboration – will provide them with new knowledge and potentially new skills that can improve their level of competitiveness, inclusion in international value chains and ultimately help strengthen the resilience of the European innovation ecosystem.



Open public consultation

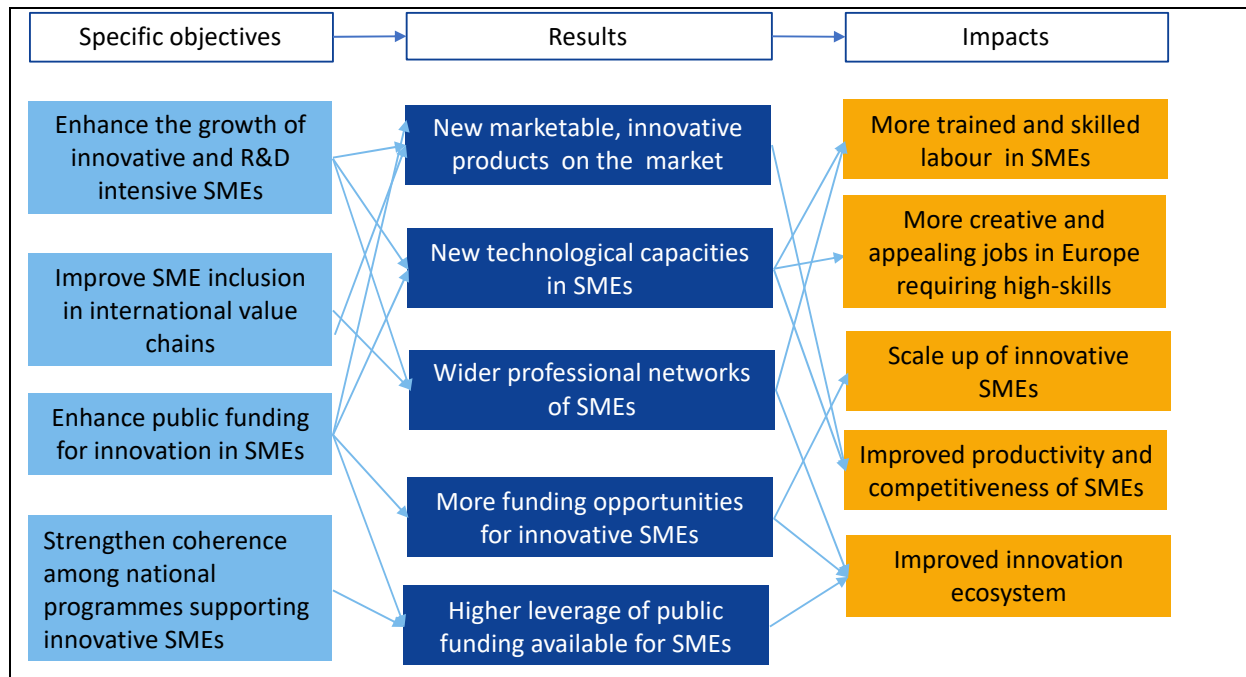
Among the different impact pathways, the relevance to deliver new scientific knowledge and reinforce EU scientific capabilities is deemed to be the least relevant impact of an Innovative SME partnership (46% of respondents found this 'very relevant' while 52% did not find it 'relevant'). The widening aspect to countries with lower R&D intensity was also not seen as a very important impact to many - 49% found it 'very relevant' versus 50% that did not. The relatively low importance of scientific impacts for the candidate partnership compared to the two other areas was also shared by academia/research institutes.

4.3.2 Likely economic/technological impacts

The likely key economic/technological impacts of the initiative are mapped in Figure 4.

⁵⁷ In technical universities, Masters and doctoral thesis are often conducted in close contact with firms. This is an important technology transfer channel (via 'heads'). See also Schmoch (2003): *Hochschulforschung und Industrieforschung. Perspektiven der Interaktion*. Frankfurt: Campus. Also the MSCA actions of industrial Ph.D.'s are an example for this type.

Figure 4: Impact pathway leading to economic/technological impacts



The candidate partnership aims to increase, in general, the **competitiveness** of SMEs through collaborative, cross-border research projects. Through the development of new products and services which impact, in particular, consumers, but also through new or improved processes and process technology, improved productivity of SMEs can be achieved. In the longer run, this also leads to a higher level of competitiveness at the firm level.

Collaboration among SMEs and other relevant partners is also a means to obtain **new technological capabilities** within firms, leading to more **skilled personnel**. If the new process technologies are implemented, a higher demand for skilled jobs is likely to follow. This may in the longer run pose a problem, in particular if there is insufficient market supply of skilled labour, but it may partly be offset if the collaborative projects are able to attract Masters and doctorate students, who may become part of the firm after their theses. This suggests that the inclusion of public partners does not only provide complementary skills needed for the execution of the project but is also a means to obtain skilled labour. While this would be an ideal circle, many SMEs are not geographically close to universities or research organisations and thus may have limited direct contacts with the Masters/PhD students. In cross-border collaboration with diverse partners and based on geographic proximity/distance, it is less likely that a graduate from a collaborating institution of country A will join an industrial partner in country B. Thus, the benefit of including a public research organisation is likely to be reaped by the private partner of the same country.

Positive economic impacts are predominantly expected at the level of the individual SME, namely the beneficiaries. Given the bottom-up principle and the limited absolute number of beneficiaries spread over a number of countries, neither radical, game-changing sectoral nor broader technological impacts can be expected. Nevertheless, this programme contributes to an improved European ecosystem for innovation in as much as new beneficiaries obtain the chance to be involved in international RDI collaboration to improve their collaboration skills and to expand their professional networks. The more SMEs participate, the wider the effects can be. This could mean that participation of an SME would be limited to one project under this partnership and further collaborative research opportunities should be envisaged, such as national programmes, Horizon Europe calls or other thematic partnerships.



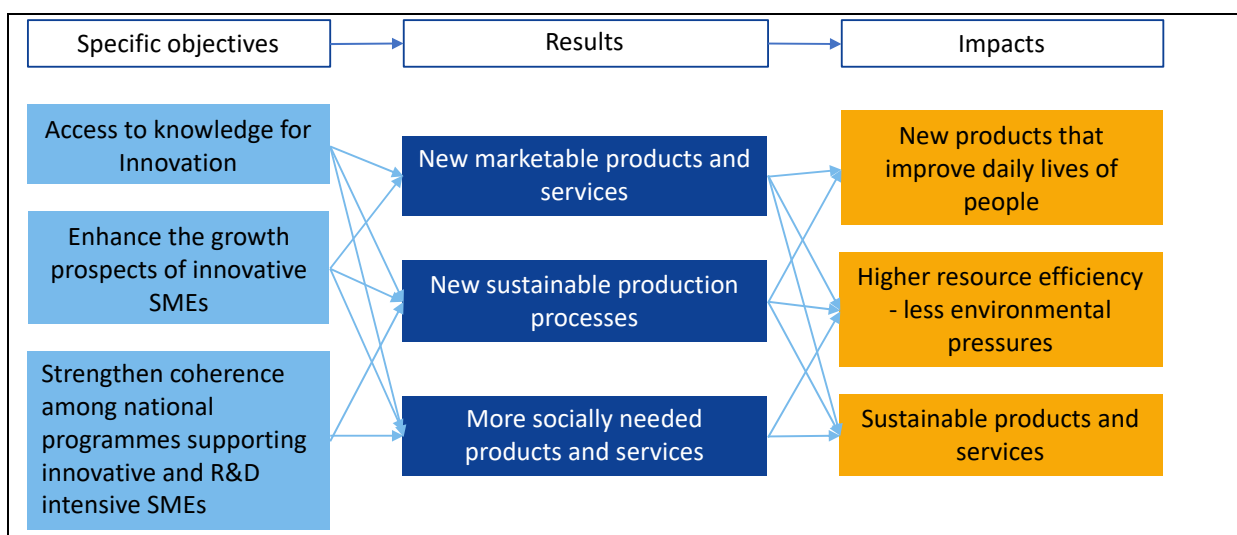
Open public consultation

The scaling up of innovative SMEs to boost European competitiveness was the most often mentioned key economic impact. About three quarters of respondents from academia/research institutes, business associations, firms and public authorities share this view. The second most important impact concerned highly skilled jobs. Increased coherence, effectiveness and efficiency of national R&I ecosystems was mentioned slightly less often as relevant or very relevant. Synergies with other national and international programmes - including the other partnerships - and the increase of financial leverage were the most relevant aspects mentioned by the respondents in terms of the legal structure - thus, what a partnerships' management should address.

4.3.3 Likely societal impacts

The scientific and the economic/technological impacts discussed above will also support the attainment of societal impacts as shown in Figure 5.

Figure 5: Impact pathway leading to societal impacts



Likely environmental impacts

One could also envisage impacts in the area of resource efficiency. This could be the case when new products need fewer resources to be produced or new processes which lead to a lower use of resources. While this would clearly lead to positive impacts, environmental impacts can, however, also be unwanted, namely in the case of funded projects which are not aligned with general EU priorities (for example on fossil fuels). In case of bottom-up, non-thematic calls and no 'directing' selection criteria, one cannot ignore this potential negative impact.⁵⁸

Likely social impacts

Likely societal impacts of a bottom-up RDI programme as envisaged are so far not specified by the candidate partnership. However, new products and services which are developed can improve the daily lives of people. This impact is also mentioned as 'very important' by a large number of respondents of the public consultation. Under the condition that selection criteria includes aspects such as sustainability and impacts on users, innovative products, services and processes can have the positive impacts outlined in Figure 5. In the absence of such criteria, there is obviously a risk that innovative projects are funded which are

⁵⁸ Confronted with this potential conflict, the ESE secretariat indicated that such a case would require sensible briefings of the reviewing experts.

politically or, at least to some countries and/or stakeholders, not desired. Examples can be envisaged in particular in environmental and energy areas such as fracking or coal-related research and innovation.

4.3.4 Likely impacts on simplification and/or administrative burden

Impacts on simplification and/or administrative burden are not expected.

4.3.5 Likely impacts on fundamental rights

Impacts on fundamental rights are not expected.



Open public consultation

The creation of new products, processes and services that help to improve the daily lives of people was the key impact among all likely impacts for all stakeholder groups. Societal needs are key to the main stakeholders. Regarding the questions on what the candidate partnerships need to do, 'Make significant contributions to the EU efforts to achieve climate-related goals' is considered needed or fully needed by majorities within the different stakeholder groups. A related need, 'Responsiveness towards societal needs', is slightly less often mentioned as a need for the candidate partnership to address.

4.4 Functionalities of the initiative

This section outlines the functionalities that need to be considered when assessing the policy options in Section 6, reflecting the selection criteria for European Partnerships defined in the Commission proposal for the Horizon Europe Regulation.⁵⁹ In the following paragraphs, we discuss the implications of the criteria relating to the type and composition of the actors involved, the range of activities to be undertaken and the directionality required if the initiative is to deliver the objectives discussed above. We also consider the complementarities and synergies with other, related initiatives under Horizon Europe and beyond.

4.4.1 Internal factors

Type and composition of the actors involved

This functionality relates to the criterion 'Involvement of partners and stakeholders from across the entire value chain, from different sectors, backgrounds and disciplines, including international ones when relevant and not interfering with European competitiveness'. It concerns the need to involve the full range of stakeholders that can usefully contribute to delivering the future R&I agenda.

The candidate partnership is intended as a continuation of the current Eurostars 2 programme. There are two lines of actors which need to be taken into account:

Key players in the project delivery are:

- Private sector companies (mainly innovative SMEs) regardless of a sector;
- Research communities (universities, research performing institutes) in various science and technology fields that provide new knowledge.

⁵⁹ European Commission (2018), 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, available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018PC0435&from=EN>

These players are mainly drawn from the activities of the national/regional funding organisations. Their effort, networks and judgements are key to initiate the cross-border research collaborations, help in the preparation of the applications and fund successful participants. The success of the Eurostars programme depends to the largest extent on these organisations. The Eureka network and the ESE support them through dissemination events, roadshows, matchmaking events etc.

A broader impact of the potential partnership will be linked to the successful inclusion of innovative projects by innovative companies – including start-ups – and by boosting the participation in Member States that are so far only marginally involved.

In terms of geographic scope, the candidate partnership is already very wide thanks to the link to Eureka. One must note that the majority of projects are executed by partners in geographical proximity and not much use is made of the extended network. The underlying idea of Innovative SMEs as an instrument to help wider market access is thus in practice often limited to the neighbouring countries.

In order to bring value to the projects and to help the further inclusion in international value chains, there is a need to involve another layer with:

Key intermediaries

The programme has so far only looked at project delivery and has left follow-up activities to the discretion of the participants and their individual relationship with the national funding agency. Market take-up, scale-up issues and other aspects have not been addressed in a coordinated manner and are so far not envisaged. This type of support is, however, needed if a sustainable impact should be reached. A closer link to the Enterprise Europe Network (EEN) and other support structures would be beneficial.



Open public consultation

According to the public consultation, the broad range of partners is of less importance than flexibility in their composition. With this, the envisaged partnership differs from the average of all partnerships. However, for academics/research institutes and public authorities, the range of actors is slightly more relevant than flexibility.

The consultation suggested that limited public-private collaboration was a key concern for academic/research institutes but less relevant to companies. SMEs and large firms were neutral or chose relevant/very relevant but to a much lesser extent than academic/research institutes.

In terms of setting long-term agendas and the key stakeholders in this endeavour, the views by stakeholder types varied somewhat but, in terms of hierarchy, they were mainly in line. The most important stakeholder was unanimously seen as being 'Industry'. 'Member States and Associated Countries' came second for firms, business associations and public authorities while academic/research institutes found that they were the second most important stakeholder.

The view on foundations is mixed – while about one third of the firms, academic/research institutes and business associations were neutral as well as more than half of the public authorities, one third of academic/research institutes found them very relevant.

Other stakeholders were also mentioned as relevant or very relevant by around 50% of all but the respondents that were public authorities. The latter were mainly neutral.

However, beyond the variety of the stakeholder types that EU programmes such as Eurostars bring SMEs to collaborate with, as pointed out by several past beneficiaries, the

key advantage of the Eurostars is the fact that the consortia are kept small, which really helps SMEs to gain skills and competences more easily.

Feedback on the inception impact assessments

Of key interest is the change of the SMEs addressed. In particular in the inception impact assessment, several stakeholders criticised the – in their view – too narrow scope of eligible R&D performing SMEs. Suggestions to open this to other forms than legal entities would also allow small but innovative firms to participate. In addition, the definitions and criteria used do not allow highly innovative, slightly larger companies, to lead projects.

Interviews

The change towards Innovative SMEs is welcomed by various interview partners alike. While it is not yet clear how the 'innovative' will be evaluated, interviews with innovation agencies and business associations confirmed that the current definition is too restrictive, leading to selected projects that meet the R&D criteria but are not truly innovative. There is the expectation that a change in the name and the criteria will have a real effect on the inclusion of innovative SMEs and their projects.

A new programme will need not only to keep the current level of openness (geographic and by stakeholder type) but also to foster and increase the participation of stakeholders capable of meeting the needs of SMEs. Among the most valuable contributors, public research organisations (PROs) and universities are mentioned most often in the public consultation, followed by laboratories and other systemic actors. Their engagement depends on the specificities of each sector as well on the characteristics of each participating country.

In several Member States, participation of PROs is a long-lasting practice in the national innovation ecosystem (e.g. France with INRA, Finland with VTT, the Netherlands with TNO, Germany with the Fraunhofer Institutes), while in other countries, this kind of relationship does not exist or struggles to be put in place. The additionality brought by research institutes close to the markets is essential to support start-ups and companies with a clear focus on development of new technologies. In this sense, the participation of RTOs is deemed as more valuable by interview partners than the participation of universities and labs. The latter might, however, meet key needs of SMEs: proximity to application and capabilities of knowledge transfer.

Given that a large number of start-ups are in the IT sector, some interviewees suggest that the contribution of academia has become less relevant for SMEs in this sector. Companies with a well-advanced business seem to benefit from partnering with academic stakeholders, while SMEs at the early stage of their life cycle benefit from other types of stakeholders, in particular PROs. This is linked by the interviewees to a different mentality of academic staff, which hampers the effective collaboration with business partners.⁶⁰ In fact, the public consultation provides some insights: while 70% of academia/research institutes find a broad range of partners 'very relevant', only one third of the companies agree with this. On the other hand, more than half of the academia/research institutes find it very relevant that the partnership aims at better links to practitioners on the ground – with which only one third of the firms agree. The more theoretical perspective of academia/research institutes can also be seen with the perception of the main problems: for this stakeholder group, the 'Lack of understanding or/or knowledge about scaling SMEs'

⁶⁰ This difference has been mentioned in the empirical literature about two decades ago. See for example Abramson, N. (et al) (1997): Technology transfer systems in the US and Germany. According to some interviewees, some universities participate in collaborative public-funded projects with the sole objective of being granted funding for their research, without real commitment to truly developing innovation in partnership with the business parties.

was chosen as 'very relevant' by three quarters of this group, while, for companies, the most important problem was 'Innovation gap in scaling SMEs'.

According to a minority of the interviewees with business stakeholders, the contribution of the academic sector is not very relevant for the development of innovation and new technologies: The European Commission should instead focus on fostering partnerships among SMEs only or involving large businesses. These are not seen as key parties in Eurostars consortia given that the interest of big companies being part of them is often focused on buying the technology developed by start-ups and SMEs.

An interview with an SME summarised the various points made well: Eurostars must focus on SMEs. Collaboration with other types of stakeholders is good, but not essential.

To truly acquire new competences, SMEs need years of working together with other business partners. Thus, rather than acquiring the skills, businesses found acquiring information and know-how to access value chains to be particularly important.

Type and range of activities

This functionality relates to the criterion 'Approaches to ensure flexibility of implementation and to adjust to changing policy, societal and/or market needs, or scientific advances'. It concerns the types of activity that the initiative is intended to encourage, such that it is able to respond effectively to the challenges and problems described in Section 2.

The candidate partnership will need to undertake several activities to address the objectives set through a range of activities. They include a further **promotion of the programme**, in particular in those currently underrepresented member states. This may happen through harnessing Eureka initiatives such as roadshows or dissemination events. This has already happened in the past but, so far, Eurostars promotion activities focused mainly on western member states.

Given the shortcomings of some national funding organisations in widening countries, it is necessary to undertake **capacity-building activities** such as **mutual learning seminars** where good practice examples can be shared and learning takes place. This could also have a positive effect on the innovation ecosystem in a given country since it may enhance the capabilities of important innovation actors to coach and advise companies and to help them grow.

A planned new aim is to provide SMEs with access to a range of support services at the national and EU level (such as mentoring, coaching, advisory services). This is seen as valuable support to companies by the national funding agencies and other types of partners in the candidate Innovative SME partnership.

The new partnership will also need to develop a **long-term strategic planning agenda**. If the bottom-up principle is to be maintained, this does not exclude a need to define the setting of the initiative. In fact, it could clarify the links to other programmes and policies, overall programme goals and expectations vis à vis beneficiaries. Linked to an agenda is the development of a working **definition of 'Innovative SME'** and thus the scope of potential beneficiaries.

The activities will also need to further enhance the time to contract period. There has been significant progress over the past decade but the target has not yet been reached. The bottleneck tends to be on the national side; again, with capacity-building activities, this could be addressed.

The main activity is to **run bottom-up calls for proposals, organise the evaluation process** and **enable collaborative cross-border research projects**. Improvements in this process will be needed in order to reach shorter time to grant periods. Suggestions from the interviews include a faster assignment of experts and their eligibility checks and

a faster provision of the ranking (e.g. with the help of algorithms) coupled with shorter evaluation periods.

Additional new activities are currently envisaged, such as mentoring and coaching, which are to some extent already provided by individual funding agencies.

Directionality and additionality required

This functionality relates to the criteria 'Common strategic vision of the purpose of the European Partnership' and 'Creation of qualitative and significant quantitative leverage effects'. The former highlights the importance of ensuring that all participating stakeholders have a common understanding of the purpose of the policy intervention and the direction of the R&I activity that it is intended to encourage. The leverage effects relate to the creation of spillover effects of the knowledge gained in the broader community as well as the crowding-in effects on private investments in R&I – both among participating stakeholders and in the broader community, and/or the pooling of resources from EU Member States.

In terms of a strategic directionality, the envisaged bottom-up programme cannot be directed in a specific technological direction. A financial directionality can be envisaged if greater structural alignment of national research programmes is to be achieved.

So far, the candidate partnership is lacking in terms of directionality. The programme provides a niche opportunity to companies but this support is not linked to any specific technological goal. While Eurostars 2 has so far reached a minimum level of harmonisation, the Member States would, through their funding bodies, need a strong commitment in order to move beyond the current level. Several areas for improvement have been mentioned in the previous evaluations but there have been limited efforts and slow progress. Given the programme's length and the gradual improvements made, it is unlikely that further harmonisation in funding rules or the establishment of a small real 'common pot' will be reached in the next programming period from 2021 to 2027.



Open public consultation

While several appreciate the flexibility of the Eurostars 2 and in particular the bottom-up principle, views in the public consultation also suggest that a bottom-up programme may not be the right instrument to tackle technological needs. A more coordinated, long-term and top-down approach may lead to tangible outcomes. The public consultation shows that beneficiaries clearly see a need to align with political goals such as sustainability. On the other hand, companies did not, in particular, fully agree to a 'need to follow policy goals' in this particular partnership.

A strategic and ambitious vision for a new partnership is currently lacking, possibly due to the fact that - according to interviews with funding agencies - the Eurostars members see the programme as 'mainly a national programme' that serves national beneficiaries and that is paid for mainly through national funding. Organisations involved in running Eurostars see a clear improvement in terms of alignment – at least in the very active countries – but directionality is not an objective. The programme builds on flexibility and small-scale projects and thus offers a complementary funding opportunity to normal Framework Programme calls. Several interviewees mentioned that this duality should be maintained.

Interviews

Interviews report a high level of appreciation of the bottom-up approach and some scepticism towards a more thematic-oriented approach for the programme. Research institutes, public administrations and also business beneficiaries clearly prefer the current openness and flexibility and thematic openness of the programme and wish it to be kept.

National innovation agencies mention that even the bottom-up approach can contribute to SDGs and address societal challenges. A specific budget for SDG actions could possibly be reserved, also within the framework of Innovative SMEs.

Interviews with research organisations suggest that the formulation of new policies and the change in mindsets of people can provide the conditions for projects that contribute to the SDGs' objectives. Public authorities (and some financial intermediaries) point out that the focus of a new innovative SME programme should not be the promotion of projects which are meant to solve societal challenges, but that the focus should be kept on economic success.

Only a minority of the enterprises interviewed find positive aspects in a more top-down approach such as directionality towards societal goals.

4.4.2 External factors

The proposed Regulation for Horizon Europe also identifies the need to consider 'Coordination and complementarity with Union, local, regional, national and, where relevant, international initiatives or other partnerships and missions' when assessing the case for a partnership. It concerns the potential for linkages with other relevant R&I initiatives proposed or planned for the forthcoming Framework Programme, at the EU level in the context of the Multiannual Financial Framework (MFF) 2021-27 and beyond.

Among the European level funding programmes, Eurostars has a unique feature since it provides funding for cross-border R&D collaboration **without a thematic priority**. This bottom-up principle and the derogation from the Framework Programme's rules of participation allow the projects to have only a minimum of two beneficiaries.

The current partnership focusses, with its direct financial support of collaborative research, on one particular aspect in the range of needs of SMEs to remain competitive or gain competitiveness. In order to contribute to these aims, it is important to see the candidate partnership as being complementary to other available support schemes.

EU-wide SME support schemes which provide funding for R&D projects will be limited from **Horizon Europe to the EIC** (Pillar III) and **general calls** (Pillar II – Global Challenges and industrial competitiveness). Those under the EIC Accelerator are open for single beneficiaries with their bottom-up proposals. A grant is, however, only possible once in the lifetime of the Framework Programme.

Further schemes at EU level that address the competitiveness of firms – in particular SMEs – provide either **funding or general support** (e.g. InvestEU, instruments under the envisaged Single Market Programme). The proposed budgets for the EIC (€10 billion), clusters under Pillar II (€50 billion), the Single Market programme (€4 billion) and the InvestEU programme (€3 billion) provide opportunities for SMEs (see also Appendix F).



Open public consultation

In the public consultation, SMEs in particular were very clear about what they were looking for: an 'Increased financial leverage' - more than two-thirds of SMEs found this 'very important', a 'More effective implementation' (about half of the SMEs rated this 'very important') - and 'Facilitated synergies with EU/national programmes' (40% of SMEs found this 'very important'). Comments in the public consultation suggest that links with other Horizon Europe programmes, including clusters, EIT, and other institutionalised partnerships) should be developed in order to further build on their outputs and contribute to an overall pipeline approach. Several interviewees within SMEs and business associations mention the need to strengthen the concept stage (previously available under the SME Instrument).

Interviews

Complementarity is addressed by a number of interview partners. They see the candidate partnership as a complementary instrument (1) to the EIC - the partnership will not only fund the unicorns but also moderate innovators, and (2) to normal calls – for which proposals require too much preparation and which are often too large and complex for SMEs.

Demand for an Innovative SME partnership is driven or hampered by a number of external factors. Acting as drivers or barriers are the availability or non-availability of national support schemes for international collaboration. Several interviewees point out that a lack of national opportunities drives them to seek international collaboration. Availability at national level does not pose a barrier but if the international collaboration is more complex, requires more effort and administration, several SMEs prefer to use the national schemes. Low quality of the national programmes' management has been mentioned by several interviewees from new member states as a driver for applying to international schemes. The interviewees saw transparent and uniform evaluation and funding rules – as applied under regular Framework Programme calls – as a clear driver to apply to these instruments. If national funding programmes require less administration and effort, the demand for international programmes which are perceived to require more, is more limited. According to interviews with business organisations, the low success rate in international programmes is a clear barrier to many SMEs since it brings mainly frustration.

5 What are the available policy options?

In this chapter, we provide an overview of the key characteristics of the policy options for this initiative. The Horizon Europe regulations put forward three forms of European Partnerships that constitute the policy options for this initiative; standard Horizon Europe calls are a fourth option while acting also as a baseline against which the three partnership options will be compared.

To ensure a correct assessment of the different options and their effectiveness, it is crucial to take into consideration both the objectives and the functional requirements outlined in Section 4.4. The descriptions of the options in the sections below therefore focus on the implications of the options' characteristics related to these functionalities. They are based on the options' characteristics specifically related to the functionalities presented in Section 4.4. A full description of the options is also provided in the report on the overarching context to the impact assessment studies.

5.1 Option 0: Horizon Europe calls (baseline)

According to the baseline policy option, the Eurostars Programme would be discontinued. The Horizon Europe Framework Programme will offer a range of opportunities for SMEs to apply for funding, mainly maintained through calls for collaborative projects under the Horizon Europe Framework Programme, normal calls (Pillar II) and under the EIC (Pillar III). This option allows for collaborative calls with different partners but without the bottom-up, non-thematic principle and the requirements for research consortia such as a minimum of three partners. Member States are involved, through the Programme Committees, in setting up annual or bi-annual Work Programmes, defining the broad areas for calls for proposals ('traditional calls' area).

In addition to traditional calls, schemes run by the European Innovation Council will also be an option for a sub-set of SMEs. The EIC is likely to strengthen innovation capacities in European companies through the EIC Accelerator, in particular start-ups, by offering companies either grant-only support, support in the form of blended finance as well as equity funding.

Under this framework, parts of the rationale for the Innovative SME partnership would be overlapping with the EIC instrument: while its focus is on investing resources into mono-

beneficiary businesses (particularly start-ups) it is without a thematic priority and thus bottom-up.

Table 2: Key characteristics of Option 0

	Traditional calls under Horizon Europe
Stakeholders involved	Consortia of public and/or private actors in ad-hoc combinations, some actions are single actor (mono-beneficiary)
Main characteristics	<p>Lower level of EU budgetary long-term commitment for the priority compared to the partnership options.</p> <p>Strategic planning mechanisms allow for a high level of flexibility in response to particular needs over time.</p> <p>The broad scope of the stakeholders providing their input to the research agenda implies a lower level of directionality than what can be achieved through the partnerships.</p> <p>Often, the long-term perspective of the stakeholder input is limited, which risks reducing strategic capacity in addressing priorities.</p> <p>Strategic programming for research and innovation in the field will be done through the mainstream channels of Horizon Europe.</p>
Implementation	Traditional calls under the Framework Programme covering a range of activities, but mainly calls for R&I and/or innovation actions

5.2 Option 1: Co-programmed European Partnership

Under this option, the Member States would not be involved but industry could also lead. This option is best suited to address broader communities and where there is a need for flexibility. Partners provide input on the drafting of the respective parts of the Annual Work programme. Through a memorandum of understanding, the contractual agreement would be established. The R&I focus is on medium term priorities where the primary ambition is to generate commitment to a common strategic research agenda across a diverse set of actors / value chains and where those actors have widely differing capacities and capabilities. The partnership would translate a Strategic Research and Innovation Agenda (SRIA)/Roadmap into priorities for calls – proposed to the European Commission for implementation in the Annual Work programmes. This option is fully integrated in the Framework Programmes' Work Programmes. It offers all types of actions such as research and Innovation actions (RIA), coordination and support actions (CSA), prizes, procurement and specialised applications of actions. There are calls for proposals published in the Work Programmes of Horizon Europe. It would be a fully open option since Framework Programme rules for applications apply – including the funding rules. Participants from third countries are in principle eligible but subject to policy consideration.

Table 3: Key characteristics of Option 1

	Co-Programmed European Partnerships
Partners (other than the Union)	Suited to partnerships with private and/or public partners, including foundations and international partners
Establishment	Based on memoranda of understanding and/or contractual arrangements between the Commission and the partners
Main characteristics	<p>Commitments are not legally binding, but political/ best efforts</p> <p>Allows more flexibility during implementation (to evolve composition of partners, objectives, activities)</p>

	Co-Programmed European Partnerships
	Best suited to partnerships addressing broader communities, medium term priorities, and where there is a need for flexibility Commission: approves priorities (calls) that are implemented with Union contributions (comitology)
Effort for preparation, setting-up, and implementation	Relatively low effort for the setup and implementation compared to the other forms of European Partnerships
Implementation	Implemented in calls for proposals published in the Work Programme Horizon Europe (comitology procedure)
Partners contributions and their management	In-kind and/or financial contributions agreed in the work plan. Typically, only in-kind contributions from private partners

5.3 Option 2: Co-funded European Partnership

A co-funded Innovative SMEs European Partnership would be established through collaboration between public authorities ('public to public', P2P), namely the Member State involved in the partnership by pulling together the resources of, and reaching a level of coordination among, national funding organisations. This partnership model would stem from the Horizon Europe Framework Programme and, more precisely, from a Grant Agreement (GA) having a duration that can cover the duration of the Framework Programme (7 years).

For the parties involved, i.e. national and regional funding bodies, and possibly the ESE secretariat, this agreement would be legally binding and set the rules for their contributions, both in terms of commitment to implementing activities as well as in terms of funding (in-kind contributions included).

Member States would design a common programme to be implemented under their responsibility, with national funding pooled to launch regular calls prompting innovation-oriented SMEs to engage in cross-border R&I projects. Calls and evaluations would be organised centrally, beneficiaries in selected projects would be funded at national level, following national funding rules.

Horizon Europe rules apply to the reimbursement of costs of the national/regional funding bodies. The ESE secretariat would receive the Union contribution and use it to cover the costs of preparation and implementation of the programme (administration, costs of call organisation and evaluations) as well as partially cover the costs of the national funding of projects. The financial risk at project level would be covered by national programmes.

Table 4: Key characteristics of Option 2

	Co-Funded European Partnerships
Partners (other than the Union)	Suited to partnerships involving public authorities, with research funders (or governmental research organisations) and other public authorities at the core of the consortium. Possibility to include foundations and international partners etc.
Establishment	Based on a Grant Agreement between the Commission and the consortium of partners, resulting from a call for proposals for a programme co-fund action in the Work Programme of Horizon Europe
Main characteristics	Commitments are ensured through the Grant Agreement Allows more flexibility during implementation (to evolve with the composition of partners, objectives, activities)

	Co-Funded European Partnerships
	Best suited to partnerships that rely on pooling national programmes and policies with Union policies and investments Commission approves annual Work Programme of the consortium, covering all activities and resources
Effort for preparation, setting-up, and implementation	Moderate effort for their set-up and implementation compared to institutionalised European Partnerships
Implementation	Implemented by the consortium of partners in activities under their responsibility, including calls for proposals
Partners contributions and their management	In-kind and/or financial contributions Financial contributions from Member States are typically used for calls for transnational projects

5.4 Option 3: Institutionalised European Partnership

5.4.1 Institutionalised Partnerships under Art 185 TFEU

Under specific provisions of the TFEU, the Eurostars Programme would assume the features of an Institutionalised Partnership and be implemented by a centralised structure⁶¹, requiring a stronger and more long-term commitment from the parties involved than would be the case under the above-described policy options.

Institutionalised Partnerships have their legal basis in either Art. 185 and Art. 187 TFEU: the first sets the basis for Union participation in programmes undertaken by Member States while the second establishes a Joint Undertaking with a possible broad range of partners, traditionally mostly private partners.

According to Art. 185 TFEU, the European Union makes 'provisions, in agreement with the Member States concerned, for participation in research and development programmes undertaken by several Member States'. Art. 185 TFEU stipulates that the Union may – in agreement with Member States – participate, financially and in the structures created for their execution, in multiannual research and development programmes undertaken by several Member States and possibly associated countries. Article 185 initiatives have the advantage of providing a long-term financial perspective for participants and providing policy coherence by integrating Union and Member States' resources. The legal basis for Article 185 initiatives is a Decision of the European Parliament and Council, based on a proposal by the European Commission.

All Participating States involved would need to respect their financial obligations to ensure the functioning of centralised implementation structures, which have specialised staff.

The Designated Implementation Structure of the Article 185 Initiative would launch regular calls for cross-border R&I projects specifically targeting innovative SMEs.

Concerning the rules of implementation, the Horizon Europe rules apply by default: the Member States (Participating States) would commit to adhere to a Horizon Europe-based Grant Agreement and provide the centralised structures with the prerogatives to centralise the delivery of financial contributions.

⁶¹ Similar/equivalent to the EUREKA Secretariat in Eurostars 1 and 2.

Table 5: Key characteristics of Option 3

	Institutionalised European Partnerships under Art. 185 TFEU	Institutionalised European Partnerships under Art. 187 TFEU
Partners (other than the Union)	Member States	Private and/or public partners, including Participating States, foundations and international partners
Establishment	Decision by Council and European Parliament	Decision by Council and European Parliament
Main characteristics	Legally binding commitments Limited flexibility (as it is difficult to change core objectives, partners, commitments, which require amending legislation) Best suited to partnerships addressing long term challenges and priorities that tend to go beyond a single MFF, stable partners and substantial commitments for contributions from all partners that other forms of partnerships would not allow Commission approves annual Work Programme of the initiative, covering all activities and resources	
Effort for preparation, setting-up, and implementation	High level of effort for their preparation and set-up, including the establishment of dedicated entities for their implementation	
Union contribution	Managed and implemented by structures created for their implementation	
Partners contributions and their management	Financial contributions and, if relevant, in-kind contributions	Financial but typically mainly in-kind contributions

5.4.2 Institutionalised European Partnership under Art. 185 TFEU (standard)

In case of this intervention, Union involvement in the structures of the programme by default takes the form of central management of all financial contributions and a single grant agreement based on Horizon Europe rules that participating States commit to. The financial risk at project level would be covered by the mutual insurance mechanism of Horizon Europe (the former participant guarantee funds).

The Horizon Europe regulation specifies that: *'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 TFEU shall implement a central management of all financial contributions, except in duly justified cases.'*

5.4.3 Institutionalised European Partnership under Art. 185 TFEU "with derogation"

In principle it is possible to include, in the basic act, a derogation from the requirement of the central management of all financial contributions and further derogations to use national funding rules in a decentralised implementation. This would result, for example, in an implementation where the central implementation structure (such as the Eureka Secretariat) is responsible for only part of the project cycle coordination (i.e. launch of calls, evaluation, possibly common elements of reporting and monitoring). The centralised structure would not pool the financial contributions from the European Commission and the Member States: grants are directly dependent on the public funding bodies of the

participating countries and each participating organisation (e.g. SMEs) should follow national funding rules. The financial risk at project level would be covered by the national programmes.

The current set-up of the Eurostars 2 Programme follows this approach.

5.5 Options discarded at an early stage

The institutionalised partnership under Art. 187 and the co-programmed policy options can be discarded since the nature of the national SME support that is envisaged in the candidate partnership does not match this specific type of partnership, which, alongside the involvement of the European Commission and the participating countries, is based on a programmatic approach to implement a jointly agreed Research and Innovation Agenda or roadmap, with a shared responsibility for implementing part of the roadmap with the partners' contributions and part of the roadmap with the Union contribution, and partners providing input to drafting the call topics.

6 Comparative assessment of the policy options

6.1 Assessment of effectiveness

Based on the intervention logic, the initiative aims to deliver scientific, economic/technological and societal (including environmental) impacts through a set of pathways (Section 4.3), which require a set of critical factors in place to be achieved in the best possible way (Section 4.4).

This section assesses the extent to which each retained policy option has the potential to allow for the attainment of the likely impacts in the scientific, economic/technological and societal sphere, based upon its characteristics (Section 5). At the end of each section, a summary of the outcomes of the assessment is provided by assigning a non-numerical score to each option for each impact desired.

The assessments in this section set the basis for the comprehensive *comparative* assessment of all retained options against all dimensions in Section 6.4. Table 6 lists the desired impacts in the three impact areas.

Table 6: Likely impacts of the initiative

Impact area	Likely impacts
Scientific impact	Widened participation
	Dissemination of new knowledge
	Access to skilled graduates
Economic / technological impact	More trained and skilled labour
	More quality jobs and higher demand for high-skills
	Scale-up innovative SMEs
	Improved productivity
	Improved innovation ecosystem
Societal impact	New products to improve the daily lives of people
	Higher resource efficiency
	Sustainable products and services

6.1.1 Scientific impacts

Option 0: Horizon Europe calls (baseline)

Under this option, the rules of participation apply. Under Pillar II, consortia of a minimum of three partners from three EU Member States or associate countries need to be formed. Given that, in the previous and the current Framework Programme, the participation rate of the private sector is below the shares of higher education and public research, one would expect that, also under Horizon Europe, projects will not be dominated by private sector participants (as in the case of the candidate partnership). Horizon Europe calls would mean that SMEs are likely to be embedded in larger consortia than currently and that the share of public research sector partners will increase. This provides the private partners with more options to access skilled graduates. The score for this would be '+++'.

The higher rate of academic partners tends to lead to more academic publications and a wider dissemination of knowledge through publications. Despite the fact that scientific publications are not of key importance to SMEs, this option has the highest potential to lead to a high numbers of scientific outputs. The score for this would be '+++'. Under Pillar III, the SME is a single beneficiary. The company does not benefit through complementary or new knowledge from a partner but can choose a topic bottom-up. Since it is not likely that an SME produces tangible scientific outputs on its own, this would score '+'. Overall, Option 0 has a relatively high potential to produce scientific knowledge. Therefore, the overall score would be '++'.

The rate of participants from widening countries is relatively low. However, compared to Eurostars 2, it is broader and, given the dedicated activities envisaged, it is likely that the width of the participating widening countries will increase. Since the scale of Horizon Europe compared to a future Innovative SME partnership would be much larger and thus the number and share of widening countries' participants likely to be much larger, this option also scores with '+++' for the potential to integrate widening countries.

Given the higher shares of different participants – in particular more academic and research institutes, the access to skilled graduates is very high under this option. It thus scores '+++'.

Option 2: Co-Funded European Partnership

Under this partnership type, the Eurostars programme could be continued without much change and the majority of the beneficiaries would remain innovative SMEs. Following the reasoning already mentioned earlier, this option provides fewer opportunities to produce high numbers of publications and thus would thus score '+'.

Broader participation of widening countries can only be achieved if national funding bodies are more effective in preparing potential beneficiaries. Under the condition that the partnership reaches out better to beneficiaries from widening countries, this option scores '++'. This is mainly due to the personal coaching from innovation agencies, which encourages and helps companies to develop a successful proposal.

In terms of access to skilled graduates, this option would score '+' – mainly due to a more limited share of academic partners which would be the source.

Option 3: Institutionalised Art 185

Under this partnership type, the Eurostars programme would be continued and the same reasoning as under Option 2 apply.

Summary

Table 7, below, lists the scores assigned for each of the policy options, based upon the assessments above, as well as taking into account the support expressed by the different stakeholders.

Table 7: Overview of the options' potential for reaching the scientific impacts

	Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185
Widened participation	+++	+++	+++
Dissemination of new knowledge	++	+	+
Access to skilled graduates	+++	+	+

Notes: Score +++ : Option presenting a *high* potential; Score ++: Option presenting a *good* potential; Score +: Option presenting a *low* potential

6.1.2 Economic/technological impacts

Option 0: Horizon Europe calls (baseline)

The academic participants in particular have a clear preference for academic publications and less so for marketable products. On the other hand, the inclusion of academic partners and research institutes provides a high potential for the participating companies to benefit in terms of skills and training opportunities. In the longer term, this may also affect changes in the quality of jobs and lead to an increase in the demand for high-skilled jobs. This impact scores thus '+++'.

Since typical Framework calls provide additional funding from the European Commission, the leverage effect from national funding is zero. There would also be no active effort to strengthen coherence under national programmes so that the impacts on scaling-up, improved productivity and an improved innovation ecosystem are limited. These impacts would score '+' under this option.

Option 2: Co-funded European Partnership

Under the co-funded option, a partnership approach can be maintained and the current structure continued. Under this option, the partnership would focus predominantly on SMEs while other types of partners would join in projects as needed, leading to an option dominated by SMEs. For the impact on skilled labour, this offers somewhat fewer opportunities mainly due to the fact that there will be fewer partners and in particular fewer partners from academia and research institutes. The impact on skilled labour and the creation of more appealing jobs would thus score '+'.

Given that this option allows for further integration efforts, a leverage effect of national contributions can be envisaged. The activities under such an option enable a number of support measures and allow the partnership to design a range of accompanying measures such as coaching or mentoring. The option also has positive effects on budgets for scaling

up. In the longer run, this may positively affect the productivity and competitiveness of SMEs and improve the innovation ecosystem. The scores for these impacts are thus '+++'.

Option 3: Institutionalised Art 185

Under this partnership type, the partnership would be continued. Since the same conditions as under the co-funded option are provided, the same scoring of the impact areas apply.

Summary

Table 8, on the following page, lists the scores we assigned for each of the policy options, based upon the assessments above, as well as taking into account the support expressed by the different stakeholders.

Table 8: Overview of the options' potential for reaching the likely economic/technological impacts

	Option 0: Horizon Europe calls	Option 1: Co-programmed	Option 3: Institutionalised Art. 185
More trained and skilled labour	+++	+	+
More quality jobs and higher demand for high-skills	+++	+	+
Scale-up innovative SMEs	+	+++	+++
Improved productivity	+	+++	+++
Improved innovation ecosystem	+	+++	+++

Notes: Score +++ : Option presenting a *high* potential; Score ++: Option presenting a *good* potential; Score +: Option presenting a *low* potential

6.1.3 Societal impacts

Option 0: Horizon Europe calls (baseline)

Under this option and Pillar II collaborative projects, new marketable products and new technological capacities are less likely to be developed within the project period. This is due to lower technology readiness levels (TRL) of supported projects and the broader inclusion of public stakeholders. However, given that there is a broader directionality within Option 0, it is more likely that the research and innovation projects are in envisaged, societally *wanted* areas. The score for this option is thus '++'. The directionality of Option 0 calls will also require greater care of resource efficiency aspects. The score on this impact is thus '+++'. Similarly, the directionality will most likely effect the sustainability of (future) products and services. The score on this impact is thus equally '+++'.

Option 2: Co-funded European Partnership

Under the co-programmed option, the traditional bottom-up calls can be maintained. The products resulting from the funding have a high potential to improve the daily lives of

people since companies have a need to develop products that are well placed on the markets. This option thus has a high potential for reaching this impact and scores '+++'.

Given the lack of direction, the potential to have a positive impact on resource efficiency and the creation of sustainable products is slightly lower than in the baseline Option 0. While certainly several SMEs have an interest in sustainability and resource efficiency, the potential without any directionality seems to be somewhat more limited. The score for this option is thus '++'.

Option 3: Institutionalised Art 185

Option 3 provides the same structural features as Option 2. The same logic and scoring as for Option 2 therefore applies.

Summary

Table 9, below, lists the scores we assigned for each of the policy options, based upon the assessments above, as well as taking into account the support expressed by the different stakeholders.

Table 9: Overview of the options' potential for achieving the likely societal impacts

	Option 0: Horizon Europe calls	Option 1: Co-programmed	Option 3: Institutionalised Art 185
New products to improve the daily lives of people	++	+++	+++
Higher resource efficiency	+++	++	++
Sustainable products and services	+++	++	++

Notes: Score +++ : Option presenting a *high* potential; Score ++: Option presenting a *good* potential; Score +: Option presenting a *low* potential

6.2 Assessment of coherence

6.2.1 Internal coherence

In this section we assess the extent to which the policy options show the potential of ensuring and maximising coherence with other programmes and initiatives under Horizon Europe, in particular European Partnerships.

Option 0: Horizon Europe calls (baseline)

The two provided instruments - collaborative calls under Pillar II and mono-beneficiary, bottom-up grants under Pillar III - are complementary instruments which provide the necessary scope for collaborative and single beneficiary research. A common set of funding, evaluation criteria and reporting requirements apply.

However, the necessary investments in terms of partner search and administrative requirements plus the absence of the support otherwise provided by national funding organisations, would favour larger consortia, including companies with collaboration experience. It is more difficult for SMEs to access funding under this option. The score for this option would thus be '++'.



Open public consultation

In the open public consultation, the baseline option was not the most preferred option overall but the second most preferred option with 23%. It is however the most preferred option by academics and public institutes (almost 40%).

Interviews

Interviews with SMEs and business associations point out that the traditional calls [NB: under Pillar II] require a lot of effort in terms of finding the right partners, that many consortia are too large for the needs and purposes of SMEs and that the projects lack flexibility. A positive factor are common funding and reporting rules for all. This was in particular mentioned by interviewees from widening countries which indicated that a common procedure is an attractive factor, in particular in comparison to complicated application procedures in their home countries.

Option 2: Co-Funded European Partnership

Internal coherence within Horizon Europe would be given. The relevant other parts of the programme would remain with the EIC (Pillar III). Since 'Innovative SMEs' as a topic would be excluded from the Horizon Europe Work Programmes and given to the Member States for funding under their responsibility, complementarity with other planned parts of the programme (i.e. EIC) would be maintained.

In terms of coherence within the co-funded partnership, there is no need for further harmonisation of funding rules, instead, national rules apply by default. In terms of evaluation and monitoring, which could be organised centrally, coherence can be expected.

Furthermore, the programme can be implemented through ESE or any other legal entity chosen. In case of ESE, the programme can benefit from complementary instruments and resources from Eureka. Under this option, the other instruments are clearly used in a synergetic way, for example roadshows organised by Eureka will also be used for the further promotion of Innovative SMEs. The candidate partnership would also be beneficial for its pool of evaluators from the other Eureka programmes.

Given that the Member States and their delegated funding organisations continue to provide preparatory services to SMEs, it is likely that they find the programme more attractive than regular calls. The score for this option would thus be '+++'.

Option 3: Institutionalised Art 185

Internal coherence within Horizon Europe would be achieved if the programme remains an instrument for collaborative R&I projects only. The EIC (Pillar III) would provide for the scale-up and calls under Pillar II would provide opportunities for collaborative R&I projects following calls for proposals based on thematic work programmes. Innovative SME remains a complementary instrument only for the feature that it is bottom-up. However, inasmuch as the supported projects are similar to other thematic calls within the Framework Programme, there will be thematic overlap (see Appendix E Figure 49).

In terms of coherence within the institutional partnership, a higher level ambition than the current partnership needs to be envisaged. Internal coherence can be achieved in terms of a balanced participation rate, common funding rules, budgetary discipline etc.

Similar to the co-funded Option 2, the programme can be implemented through ESE or any other legal entity chosen. In case of ESE, the programme would benefit from complementary instruments and resources from Eureka. Under this option, the other Eureka instruments are used in a synergetic way, for example roadshows organised by

Eureka will also be used for the further promotion of Innovative SMEs. The candidate partnership would also be beneficial for the Eureka cluster pool of evaluators.

In order to achieve greater internal coherence, efforts to reach out and attract more, innovative firms from widening countries would be needed. The score for this option would thus be '+++'.



Open public consultation

33% of all stakeholders preferred the institutionalised partnership option. For all stakeholder types but academia this was thus the preferred option. However, the relatively low share signals that there is no clear preference among the stakeholders. Among the SMEs for example, the co-funded option was the preferred option for 30% of the respondents.

Interviews

Some interviewees from business associations and SMEs expressed the opinion that additional alignment of the EU programmes supporting SMEs would not have direct impacts on the participation of SMEs. If the need for alignment is particularly felt by the European Commission, this may not be the case for businesses: those participating in Eurostars often do not have the same interest and objectives as the enterprises applying to the SME-Instrument or other programmes. SMEs tend to seek the public support of different EU and national programmes, depending on their contextual needs and the specificities of each programme.

Interviewees could, however, envisage synergies with the EIC instrument for instance, by giving access to Eurostars' beneficiaries to the same advisory services.

6.2.2 External coherence

In this section we assess the extent to which the policy options show the potential for ensuring and maximising coherence with EU-level programmes and initiatives beyond the Framework Programme and/or national and international programmes and initiatives.

Option 0: Horizon Europe calls (baseline)

In particular the planned Single Market Programme and its relevant instruments on support measures such as EEN, clusters and COSME-type of activities provide a wide range of support which address the systemic failures that SMEs face. These instruments do not provide direct funding for R&I projects. They are thus complementary to the research and innovation project funding through Horizon Europe (see Appendix F).

International collaborative research and innovation programmes, which are open to different stakeholders including private and public ones, are rather the exception at national/regional level. A few Member States have opened up their national programmes to a limited set of other countries (e.g. the D-A-CH countries in a number of programmes involving academia) or created programmes for a macro-region (such as the Nordic countries), but a generally open programme such as the Framework Programme cannot be found at national level. More specifically, SME programmes tend to have a national focus only and even bi-national or open calls cannot be found in all Member States. The score for this option would be '+++'.

Option 2: Co-Funded European Partnership

In particular the planned Single Market Programme and its relevant instruments on support measures such as EEN, clusters and COSME-type of activities provide a wide range of support which addresses the systemic failures that SMEs face. These instruments do not provide direct funding for R&I projects. If a co-funded Innovative SME partnership would

go beyond the core R&I collaboration option, there is a risk of overlap with the existing instruments at EU level, which are providing wider support schemes.

With full management of the co-funded programme by the Member States, more coherence can be expected with national programmes. The public consultation indicated a number of areas where the implementation of activities other than collaborative R&I projects could be implemented. For example, the deployment of piloting activities and co-creation of solutions with end-users. Under this policy option, the Member States have all the necessary leeway to implement what SMEs need. The score for this option would thus be '+++'.

Option 3: Institutionalised Art 185

In particular the planned Single Market Programme and its relevant instruments on support measures such as EEN, clusters and COSME-type of activities are complementary to the R&I project funding as envisaged through an institutional partnership (see Appendix F). However, given that these external programmes provide a number of other support services, an expansion of services within the Innovative SMEs partnership risks to create overlap with already existing instruments.

A more ambitious Innovative SME partnership would need to substantially increase the external coherence – in particular through further integration of the widening countries (see Appendix E Table 26). The score for this option would be '+++'.



Interviews

Interviews with stakeholders such as innovation agencies, business associations, ministries and SMEs all confirm a high degree of complementarity between the planned partnership on the one hand and the non-existence of a similar programme at national level on the other hand. The planned partnership provides an opportunity to collaborate internationally, which does not exist as such in most Member States and thus fills a gap.

Interviews and the public consultation highlight that synergies with EU and national programmes are key arguments for a legal structure and central management – which would be a feature under the institutionalised partnership.

Summary

Table 10, below, lists the scores we assigned for each of the policy options, based upon the analysis of background information and from stakeholders.

Table 10: Overview of the options’ potential for ensuring and maximising coherence

	Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutional ised Art 185
Internal coherence	++	+++	+++
External coherence	+++	+++	+++

Notes: Score +++ : Option presenting a *high* potential; Score ++: Option presenting a *good* potential; Score +: Option presenting a *low* potential

6.3 Comparative assessment of efficiency

In order to compare the policy options under common standards, we developed a standard cost model for all 13 candidate Institutionalised Partnership studies. The model and the underlying assumptions and analyses are set out in the report on the overarching context to the impact assessment studies.

Table 11, below, shows the intensity of additional costs against specific cost items for the various options as compared to the baseline, i.e. Option 0 (Horizon Europe calls). In this table we have taken into account that, for Option 3 (Institutionalised Partnership), there would be moderate additional costs for the set-up of a dedicated implementation structure given that such a structure already exists.

Table 11: Intensity of additional costs compared with Horizon Europe Calls (for partners, stakeholders, the public and the European Commission)

Cost items	Option 0: Horizon Europe	Option 2: Co- funded	Option 3: Institutionalised Art. 185
Preparation and set-up costs			
Preparation of a partnership proposal (partners and EC)	0	++	++
Set-up of a dedicated implementation structure	0	0	+
Preparation of the SRIA / roadmap	0	++	
Ex-ante Impact Assessment for partnership	0	0	+++
Preparation of EC proposal and negotiation	0	0	+++
Running costs (Annual cycle of implementation)			
Annual Work Programme (AWP) preparation	0	0	+
Call and project implementation	0	+	+
Cost to applicants	0	0	0
Partners costs not covered by the above	0	0	+
Additional EC costs (e.g. supervision)	0	+	+
Winding down costs			
EC	0	0	0
Partners	0	0	+

Notes: 0: no additional costs, as compared with the baseline; +: minor additional costs, as compared with the baseline; ++: high additional costs, as compared with the baseline; +++: very high additional costs, as compared with the baseline

The scores related to the costs set out above will allow for a 'value for money' analysis (cost-effectiveness) in the final scorecard analysis in Section 6.4. For this purpose, in Table 12 where we provide the scores for the scorecard analysis, based on our insights and findings and based on the scores above, we assign a score 1 to the option with the highest costs and a score 3 to the lowest.

Table 12: Matrix on 'overall costs' and 'cost-efficiency'

	Option 0: Horizon Europe calls	Option 2: Co- funded	Option 3: Institutionalised
Overall cost	3	1	1
Cost-efficiency	3	2	2

Notes: Score 1 = Substantial additional costs, as compared with the baseline; score 2 = Medium additional costs, as compared with the baseline; score 3 = No or minor additional costs, as compared with the baseline

We considered that while there is a clear gradation in the overall costs of the policy options, the cost differentials are less marked when we take into account financial leverage (co-financing rates) and the total budget available for each of the policy options, assuming a common Union contribution. From this perspective, there are only one or two percentage points that split the most cost-efficient policy options – the baseline Option 0– and the least cost-efficient – the Co-Funded and Institutionalised Partnership options. We have therefore assigned a score of 3 to the Option 0 for **cost efficiency** and a score of 2 for the Co-Funded and Institutionalised Partnership policy options.

It should be noted that the potential for the creation of crowding-in effects for industry has been taken into account when assessing the effectiveness of the policy options, above.



Interviews

Regarding the current setting of the partnership under Eurostars 2, SMEs – except for a few exceptions – do not allege that costs to participate in the programme are too high: In applying to Eurostars 2, SMEs always need to evaluate a trade-off between effort and benefits. Given that, in some countries funding levels differ depending on the size of the enterprise (they are for example higher for medium-sized enterprises and lower for micro or small businesses), some might decide not to apply for these grants.

For some companies, applying to Eurostars as to any other European programme still implies a lot of effort and costs. Only a few SMEs are able to subcontract parts of the required administrative aspects such as filling in the application in English. For a next partnership, SMEs expect a reduction in terms of compliance costs.

6.4 Comprehensive comparison of the options and identification of the preferred option

Building on the outcomes of the previous sections, this section presents a comparison of the options' 'performance' against the three dimensions of effectiveness, efficiency and coherence.

In Section 6.4.1, we first compare the policy options against each other for each criterion in the effectiveness and coherence dimensions, resulting in a scorecard with scores from 1 to 3 where 3 stands for a substantially higher performance. Combined with the results from the comparative assessment for efficiency in Section 6.3, above, the final scorecard will allow for the identification of the preferred option in Section 6.4.2, taking all dimensions and criteria into account

6.4.1 Comparative assessment

Effectiveness

In terms of scientific impacts, Option 0 is likely to achieve the highest impacts compared to both Option 2 and Option 3. In fact, in terms of scientific impacts, no differences are expected between Option 2 and 3. In the impact ‘widening participation’ all three options score equally, however, for different reasons. In terms of knowledge diffusion Option 0 scores better than the other two options due to the assumption that, under Horizon Europe, more academic and research institutes participate compared to a partnership that is mainly funding SMEs. This argument is also the reason why the impact area of ‘access to skilled graduates’ scores higher for Option 0.

Technological/economic impacts are split between the baseline option which scores better than the other options in terms of skills and jobs – again, mainly to a broader set of participants – and on the other hand the co-funded and institutionalised options, which have the same potential to address national programmes, foster alignment and, through these, help SMEs to scale up, make them more competitive and productive and – through the alignment, enhance the European innovation ecosystem. These three impact areas are not directly addressed through Horizon calls.

In terms of societal and environmental impacts, both partnership types score better than the baseline option when it comes to the development of new products which improve the daily lives of people. The main reason is the higher concentration of companies in the partnerships compared to the Horizon calls and their focus on commercial success. However, given the lack of directionality which is provided in Horizon calls though the work programmes but is lacking in a bottom-up programme, the partnerships score less well in terms of environmental aspects such as resource efficiency and sustainability.

As can be seen in Table 13, below, **overall the baseline option scores better than the partnership options.**

Coherence

In terms of internal and external **coherence, the three options do not differ significantly.** A small difference has been taken into account for the baseline option since there are different factors hampering access for SMEs. Other than that, the candidate partnership is recognised as a complementary instrument within the European instruments and *vis à vis* national programmes that do not offer systematically cross-border collaborative R&I projects.

Table 13: Scorecard of the policy options

	Criteria	Option 0: Horizon Europe	Option 2: Co-funded	Option 3: Institutionalised
Effectiveness	Scientific impacts			
	Widened participation	3	3	3
	Dissemination of new knowledge	2	1	1
	Access to skilled graduates	3	1	1
	Economic/technological impacts			

	Criteria	Option 0: Horizon Europe	Option 2: Co- funded	Option 3: Institutionalised
	More trained and skilled labour	3	1	1
	More quality jobs and higher demand for high-skilled jobs	3	1	1
	Scale-up innovative SMEs	1	3	3
	Improved productivity	1	3	3
	Improved innovation ecosystem	1	3	3
	Societal impacts			
	New products to improve the daily lives of people	2	3	3
	Higher resource efficiency	3	2	2
	Sustainable products and services	3	2	2
Coherence	Internal coherence	2	3	3
	External coherence	3	3	3
Efficiency	Overall cost	3	1	1
	Cost-efficiency	3	2	2

Notes: Scores for effectiveness and coherence: 3 = *substantially higher performance*; 2 = *higher performance*; 1 = *lower performance*. Scores for efficiency: 1 = *substantial additional costs*, as compared with the baseline; 2 = *medium additional costs*, as compared with the baseline; 3 = *No or minor additional costs*, as compared with the baseline

6.4.2 Identification of the preferred option

The scorecard in Table 13 shows that **the baseline option performs equal or better against the partnership options in all three dimensions**. However, within the effectiveness dimension, Option 0 scores slightly less than both partnership options. Given that the partnership addresses SMEs and thus clearly envisages economic and technical impacts, we consider that this is a more important impact to consider and value. However, these impacts will mainly be achieved if the partnerships aim at further alignment of national programmes. Otherwise, these impacts will not be achieved through non-directional funding of R&I projects within an unbalanced country participation.

While, in terms of coherence, no major distinguishing factor was identified, the differences in efficiency are noticeable and clearly in favour of the baseline option. In terms of cost efficiency, the partnership options score the same – the various underlying assumptions were pointed out – but in the various costs for the three options, **a difference can be found between co-funded and institutionalised partnership**.

While the co-funded option 2 and the institutionalised Article 185 option 3 are broadly similar in terms of efficiency, option 2 does have advantages. They relate first to the

absence of any need to impose the cost and burden of a legislative process on the Community. A second advantage is that the co-funded model would be able to be launched more quickly and with lower set-up costs. There would also be fewer winding down costs in case the partnership were not to receive any more EU funding. This policy option would also require Member States to support the programme at a higher rate, delivering more financial leverage than may be possible through Article 185 and a higher level of Member State engagement. In the co-funded model, the Commission and other Member States not directly involved with the programme could have slightly more influence in the strategic direction and performance of the programme, as compared with the Article 185 option. This could be a useful additional quality that would ensure a higher degree of external coherence at the outset and over time as other EU and Member States' SME programmes develop.

According to the interviews and public consultation, the option of an institutionalised partnership is the preferred option. Given that several interviewees and respondents to the public consultation were public entities – in particular funding bodies – a certain bias for this option needs to be taken into account. Obviously, beneficiaries – and this includes in a wider sense also the national funding bodies and the ESE - have a strong interest in continuing the programme without many changes. This precludes an ambitious vision which is, on the other hand, a requirement to set up an institutionalised partnership with wide structuring, technological, scientific and societal effects. On the other hand, anything that goes beyond the key collaborative R&I support runs the risks of producing overlaps with other existing EU programmes. The aim can also hardly be achieved through a bottom-up collaborative R&I programme which, by definition, does not set technological or scientific goals and whose direct outputs may or may not have direct societal impacts.

There are further concerns about how a better integration of widening countries can be achieved and the attractiveness be maintained in the absence of a dedicated strategy and growing competition, in particular through the EIC. **Results from the public consultation suggest that many SMEs want a single-beneficiary instrument** – which they have through the EIC. Collaboration is a problem in a small number of EU Member States, as indicated in the latest CIS – but these countries are not yet well covered by Eurostars. In the view of several beneficiaries interviewed, the introduction of a single funding procedure will particularly increase the participation of SMEs and limit their administrative burden. A central management as it is provided through thematic calls is seen as a remedy to counteract differences in national funding and reimbursement rules and to attract SMEs from widening countries too.

The comparison of the options suggests that in fact the baseline option would be the best option in terms of effectiveness, efficiency and coherence. However, given that beneficiaries appreciate the bottom-up character which cannot be offered within the baseline option, **the co-funded partnership is considered as the preferred option.** It ranks equally with the institutionalised one in terms of effectiveness but scores better in terms of efficiency and provides better prospects in terms of coherence.

7 The preferred option

7.1 Description of the preferred option

The co-funded option identified as the preferred option brings together a number of aspects which are deemed appropriate for a candidate Innovative SME partnership. Its basic rationale is to bring Member States together to invest at scale in key R&I issues of general and common interest and it is also based on national programmes. It shows a particularly high level of flexibility in terms of activities to be implemented, as it is open to Member States and third parties. Legal entities in countries that are not part of the co-funded consortium are usually excluded from funding under the calls launched by the consortium.

This option does, however, need a higher ambition from the ESE in order to bring the added value compared to the baseline option which is more efficient and effective. As mentioned, simply adding other services without tackling the qualitative issues in a number of widening countries cannot be a solution. Furthermore, while the SMEs clearly like this bottom-up instrument which provides opportunities for small-scale projects, there is currently no clear European added-value if no further alignment on the organisational/administrative side of funding organisations is addressed as a key priority. While the bottom-up character of the programme is appreciated, potential clashes with wider EU-policies such as the Green Deal need to be avoided. In fact, a clear reference and commitment to sustainable goals from the outset would render the programme to be a strategic instrument for the 2021-2027 EU strategy.

In Table 14, below, we indicate the alignment of the preferred option with the selection criteria for European Partnerships defined in Annex III of the Horizon Europe Regulation. Given that the design process of the candidate Institutionalised Partnerships had not yet been concluded and several of the related topics are still under discussion at the time of writing, the criteria of additionality/directionality and long-term commitment are covered in terms of *expectations* rather than *ex ante* demonstration.

Table 14: Alignment with the selection criteria for European Partnerships

Criterion	Alignment of the preferred option
Higher level of effectiveness	<p>The broad inclusion of all Member States provides a key opportunity for innovative SMEs to collaborate internationally on RDI projects with a high level of flexibility in terms of activities and projects. The partnership provides a complementary opportunity for innovative SMEs to collaborate with like-minded partners in relatively small and targeted projects. High(er) success rates than under the baseline option render the programme attractive so that, in the longer run, either the success rates decrease or the commitment of the Member States increases – to match the increasing demand.</p> <p>Through the focus on innovative SMEs, more products and services that address the needs of society are likely to be obtained. Whenever needed, academic partners and research institutes will be integrated.</p>
Coherence and synergies	<p>Given that the programme serves a niche and so far has no overlap with other existing programmes, this will be maintained. Attention needs to be paid to various new services currently envisaged – duplication with other support schemes at EU and national level should be avoided.</p> <p>A higher level of synergies can be expected: 1) within the Framework Programme, the partnership will be the single instrument to address innovative SMEs (yet, they can participate in other parts such as regular thematic calls, other partnerships and the EIC).</p> <p>2) further synchronisation of national programmes can be expected if the partnership keeps up with the higher ambition needed: in order to reach more efficient programme management and faster processes for the granting of funding, stricter deadlines at the national level are needed. Through mutual learning and other capacity building activities at Member State level, the funding bodies are getting more efficient and appreciated by local SMEs. Thus, synergies can also be achieved better and the programme will contribute to the European innovation ecosystem through more resilient national support structures.</p>
Transparency and openness	<p>Transparency and openness are achieved through the involved national support structures through their active and wide promotion of the programme. They also reach out more effectively since they provide guidance and good practice examples to help new participants to submit a successful proposal. The goal is to include as many SMEs and thus avoid consecutive double funding and to prepare beneficiaries to successfully apply to other, follow-up</p>

Criterion	Alignment of the preferred option
	instruments. The partnership will be open in particular the link to EUREKA brings in a number of international countries as third parties.
Additionality and directionality	Throughout the long-term existence of the predecessor programmes, the partnership has demonstrated its benefit for participants. ESE has already expressed its intention to extend services - many of them could also be addressed with a better linking to existing national or EU level support schemes. Through a qualitative improvement of national support organisations, the European innovation landscape will improve. Leverage has been achieved already in the previous partnership: the added-value of flexible research and innovation projects and the demand of those by SMEs are not ignored by policy makers and thus, national funding is attracted.
Long-term commitment	The need for a long-term commitment by the Member States and the EC are reciprocal: the length of the partnership of seven years provides a clear signal to the Member States and the end beneficiaries, the SMEs, that the EC is committed to support SMEs. This drives the political decisionmakers to commit substantial contributions to the programme.

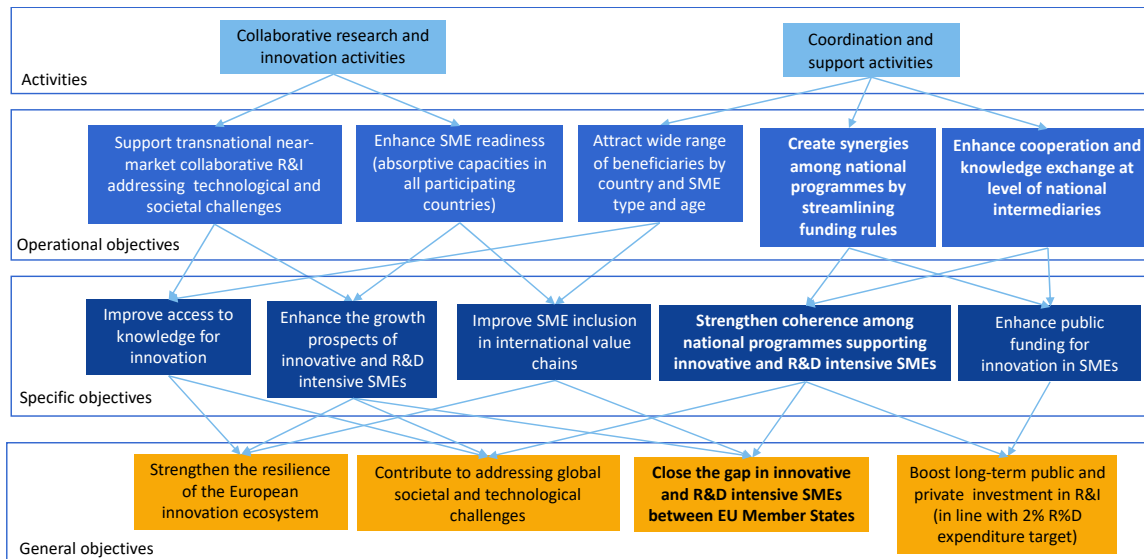
7.2 Objectives and corresponding monitoring indicators

7.2.1 Operational objectives

The partnership provides mainly two types of activities, namely collaborative research and innovation activities, which are implemented through calls for proposals. They serve the operation objectives to support cross-border, collaborative and near market research and innovation and enhance the SME readiness levels. Through other coordination and support activities, namely to attract a wide range of beneficiaries, the creation of synergies between national programmes, and a better cooperation and knowledge exchange between national intermediaries, a number of objectives – specific and general – are addressed. While collaborative research and innovation activities for SMEs exist to some extent at Member State and EU level (top-down and thematic), the alignment of national programmes and enhanced functioning of and more effective and efficient processes of intermediaries and funding bodies are not addressed in other instruments and programmes. There is a clear added value and 'selling point' for the partnership to further address gaps towards a better alignment.

Figure 6 below, lists a range of actions and activities, going also beyond the R&I activities that can be implemented under Horizon Europe. This reflects the definition of European Partnerships in the Horizon Europe regulation as initiatives where the Union and its partners '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'.

Figure 6: Operational objectives of the initiative



7.2.2 Monitoring indicators

Table 15: Monitoring indicators in addition to the Horizon Europe key impact pathway indicators

	Short-term (typically as of year 1+)	Medium-term (typically as of year 3+)	Long-term (typically as of year 5+)
Scientific impact	Number of upskilled personnel in a funded project	Number of projects able to secure funding in other Horizon Europe calls (thematic clusters).	
Technological / economic impact	IPR applied for at home market and at the European Patent Office (separate monitoring)	New products, services or processes introduced to the market	New products or processes remaining on the market
Environmental / sustainability impact		New environmental products or processes introduced to the market	New environmental products or processes remaining on the markets and contributing to the reduction of environmental pressures
Social impact		New products or processes introduced to the market enhancing daily lives of consumers	New products or processes remaining on the market enhancing daily lives of consumers

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Appendix B Synopsis report on the stakeholder consultation – Focus on the European Partnership for Innovative SMEs

Disclaimer: the views expressed in the contributions received are those of the respondents and cannot under any circumstances be regarded as the official position of the Commission or its services.

B.1 Introduction

Following the European Commission's proposal for Horizon Europe in June 2018,⁶² 12 candidates for institutionalised partnerships within 8 partnership areas have been proposed, based on the political agreement with the European Parliament and Council on Horizon Europe reached in April 2019⁶³. Whether these proposed institutionalised partnerships will go ahead in this form under the next research and innovation programme is subject to an impact assessment.

In line with the Better Regulation Guidelines,⁶⁴ the stakeholders were widely consulted as part of the impact assessment process, including national authorities, the EU research community, industry, EU institutions and bodies, and others. These inputs were collected through different channels:

- A feedback phase on the inception impact assessments of the candidate initiatives in August 2019,⁶⁵ gathering 350 replies for all 12 initiatives;
- A structured consultation of Member States performed by the EC services over 2019;
- An online public stakeholder consultation administered by the EC, based on a structured questionnaire, open between September and November 2019, gathering 1635 replies for all 12 initiatives;
- A total of 608 interviews performed as part of the thematic studies by the different study teams between August 2019 and January 2020.

This document is the synopsis report for the initiative “Innovative SMEs”. It provides an overview of the responses to the different consultation activities. A full analysis of the results is provided in the study Data Report.

⁶² https://ec.europa.eu/commission/presscorner/detail/en/IP_18_4041

⁶³ https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_19_2163

⁶⁴ https://ec.europa.eu/info/files/better-regulation-guidelines-stakeholder-consultation_en

⁶⁵ The full list of inception impact assessments is available here. They were open for public feedback until 27 August 2019.

B.2 Feedback to the inception impact assessment on candidate initiatives for institutionalised partnerships

Following the publication of the inception impact assessment, a feedback phase of 3 weeks allowed any citizen to provide feedback on the proposed initiatives on the “Have your say” web portal. In total 350 feedbacks were collected for all initiatives.

For the initiative “Innovative SMEs” 29 individual feedbacks were collected, mainly from Public authorities, Business associations, Companies and businesses and non-governmental organisations.⁶⁶ Among the elements mentioned concerned the following points:

Validation of the needs of SMEs that Eurostars aims to fulfil:

- Respondents agreed on that the Eurostars Programme is capable to supporting SMEs in their efforts to develop new products and access new markets and value chains, mainly by providing funds and opportunities for cross-border collaboration.
- Small countries and regions, such as Malta and even Belgium, might hardly find opportunities to cooperate with international partners. Therefore, the Eurostars Programme fulfils their need by setting up opportunities for cross border collaboration with other companies and institutions.
- SMEs and start-ups in R&D-intensive industries face a higher cost in accessing capitals to fund research and finally produce innovative products. In these circumstances, Eurostars can provide useful financial support (German business).

Openness to new key actors: burdens and opportunities

- European SME definition does not allow some companies to participate. The involvement of these innovation leaders which are just beyond the SME threshold would be especially important in the EU R&D policy area.
- Small countries might not have real interest in widening the cooperation with non-EU countries and third countries.
- Additional third countries should be allowed to participate to Eurostars
- Eurostars-3 should open to business actors which do not have a legal entity, such as skilled-craft SMEs, which cannot participate to the programme.

Criticisms to the current set up of the Eurostars Programme

- EU SME definition does not allow some companies to participate into the partnership.
- National rules and regulations are hindering the development and growing of the SMEs, especially given that the creation of the Single Market is still incomplete.

Feedback on the envisaged partnership and Policy Options

- Some businesses prefer Option 0 (No partnership, calls for proposals as part of the European Innovation Council under Horizon Europe) to finance consortia or even mono-beneficiaries
- Public authorities and national innovation agencies prefer Option 3: Institutionalised European Partnership, based on Article 185 TFEU.

⁶⁶ Feedback on inception impact assessment to be found on https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2019-4972378/feedback_en?p_id=5722277

General suggestions

- Public authorities expect the proposed partnership to continue fostering international collaborations (in line with the EUREKA internationalisation strategy) and to add the possibility to cooperate with other non-EU countries.
- Public authorities wish Eurostars-3 to maintain the bottom-up approach and not to follow a thematic approach (as in calls under Horizon 2020/Horizon Europe).
- Business actor: Allow funding for mono-beneficiaries
- Prepare other complementary programmes supporting the SMEs after the end of the Eurostars programme funding and to growth and scale-up worldwide.
- Create programme for dissemination and exploitation of the projects' results.
- Reduce the bureaucracy and complexity of the processes: simplifying reporting, focusing reporting on results, i.e. by providing consultancy paid by the EC to help SMEs in filing application processes and reports .

Suggestions on the application

- Eligibility criteria should be harmonised among countries.
- the current SME definition should be revised: as it is right now, it does not consider sector-specific requirements, which leave out a large number of enterprises which therefore do not have access to potential funding for innovation.

Suggestions on the proposal evaluation

- On the change from R&D intensive to the "Innovative SME" criteria: Eurostars-3 should open up to business actors such as skilled-craft SMEs, and other highly innovative companies but do not meet the R&D criteria.

Suggestions on the funding schemes

- Diversify funding sources and instruments to leverage public funding, such as instruments other than grants (repayable loans with preferred interest rates).
- Higher financial commitment by the EUREKA MS would be welcome

On the creation of the Central Financial Management:

Some stakeholders (especially national innovation agencies) fear that the creation of a Central Financial Management by the EC would risk a decreasing interest of public authorities in investing in the Eurostars Programme. This might have as a consequence to rise significantly the operational costs for the EUREKA Secretariat, which will need to increase the spending for activities such as the selection of the experts for the proposal evaluation or the promotion of Eurostars.

Relation with other EU programmes

Create synergies or at least logical continuity with the EIC instruments (particularly EIC-Accelerator), in terms of funding as well as in the promotion.

B.3 Structured consultation of the member states on European partnerships

A structured consultation of Member States through the Shadow Strategic Configuration of the Programme Committee Horizon Europe in May/ June 2019 provided early input into the preparatory work for the candidate initiatives (in line with the Article 4a of the Specific Programme of Horizon Europe). This resulted in 44 possible candidates for European Partnerships identified as part of the first draft Orientations Document towards the

Strategic Plan for Horizon Europe (2021-2024), taking into account the areas for possible institutionalised partnerships defined in the Regulation.

The feedback provided by 30 countries (all Member States, Iceland and Norway) has been analysed and summarised in a report, with critical issues being discussed at the Shadow Strategic Programme Committee meetings.

B.3.1 Key messages overall for all candidate Institutionalised Partnerships are the following:

Overall positive feedback on the proposed portfolio, but thematic coverage could be improved

The results indicate a high level of satisfaction with the overall portfolio, the level of rationalisation achieved, and policy relevance. While delegations are in general satisfied with the thematic coverage, the feedback suggests the coverage could be improved in cluster 2 "Culture, creativity and inclusive society" and cluster 3 "Civil Security for Society".

Large number (25) of additional priorities proposed for partnerships by delegations

Despite high satisfaction with the portfolio and candidates put forward by the Commission, countries put forward a high number of additional priorities to be considered as European Partnerships. A closer examination suggests that these additional proposals are motivated by very different reasons. Whilst some proposals are indeed trying to address gaps in the portfolio and reach a critical mass, then, others are driven by the wish to maintain existing networks, currently not reflected in the Commission proposal (e.g. those based on JPIs, ERA-NETs). In addition, some proposals reflect worries over some topics not being sufficiently covered in the existing proposals, but could be possibly well covered within the scope of existing partnerships, or by traditional calls under the Framework Programme.

Critical view on the high number and openness of Joint Undertakings

Country feedback suggests dissatisfaction with the high number of proposed Article 187 TFEU partnerships. Notably smaller as well as EU-13 countries raise concerns with regards to the potential insufficient transparency and openness of the partnership model. In the feedback, countries either directly support or ask to carefully analyse whether the objectives of this proposal could be reached with the co-programmed model.

For those partnerships that will be set up on the basis of Article 187, the country feedback stresses the need to ensure a clear shift towards openness in the governance, membership policy and allocation of funding of these partnerships. Notably, it is emphasised that the JU rules should not have any limitations or entry barriers to the participation of SMEs and other partners, including from academia.

Although the feedback suggests a general criticism, there are few concrete and broadly supported proposals, including to reduce the number of institutionalised partnerships mergers or by alternative implementation modes.

Lack of cross-modal perspective and systematic approach to mobility

The current proposal foresees 5 partnerships in the area of transport (for rail, air traffic management, aviation, connected and automated driving, zero-emission road transport), and 2 that in closely related technologies for radically reducing carbon emissions (hydrogen, batteries). Several delegations would wish to see a systemic approach to developing mobility and addressing related challenges (optimisation of overall traffic, sustainable mobility solutions for urbanisation), and do not support a mode-dependent view only. This suggests the need to discuss how to ensure greater cooperation between

transport modes and cross-modal approaches in establishing partnerships in the area of mobility.

Partnership composition: the role of Member States in industry partnerships

The composition and types of partners is an important element for the success of a partnership, e.g. to ensure the right expertise and take-up of results. Ensuring broad involvement without overly complicating the governance of the partnership remains an important an important challenge in the design of future partnerships.

In the feedback, several Member States express their interest to join as a partner in partnerships that have traditionally been industry-led. However, individual comments suggest there are different views on what their involvement means in practice, with some countries expressing readiness to commit funding, while others support limiting their involvement to alignment of policies and exploiting synergies. This suggests the need to discuss further what the involvement of Member States means in practice (notably in terms of contributions, in the governance), and what would be possible scenarios/options in Horizon Europe. There is special interest in testing and deployment activities, in synergies with Cohesion Funds and CEF priorities and investments.

Although it is too early to determine the interest of industry/ businesses in the topics proposed for partnerships where the main partners are public authorities, their involvement in in public centric partnerships will also be an important question in the design and preparation of future proposals.

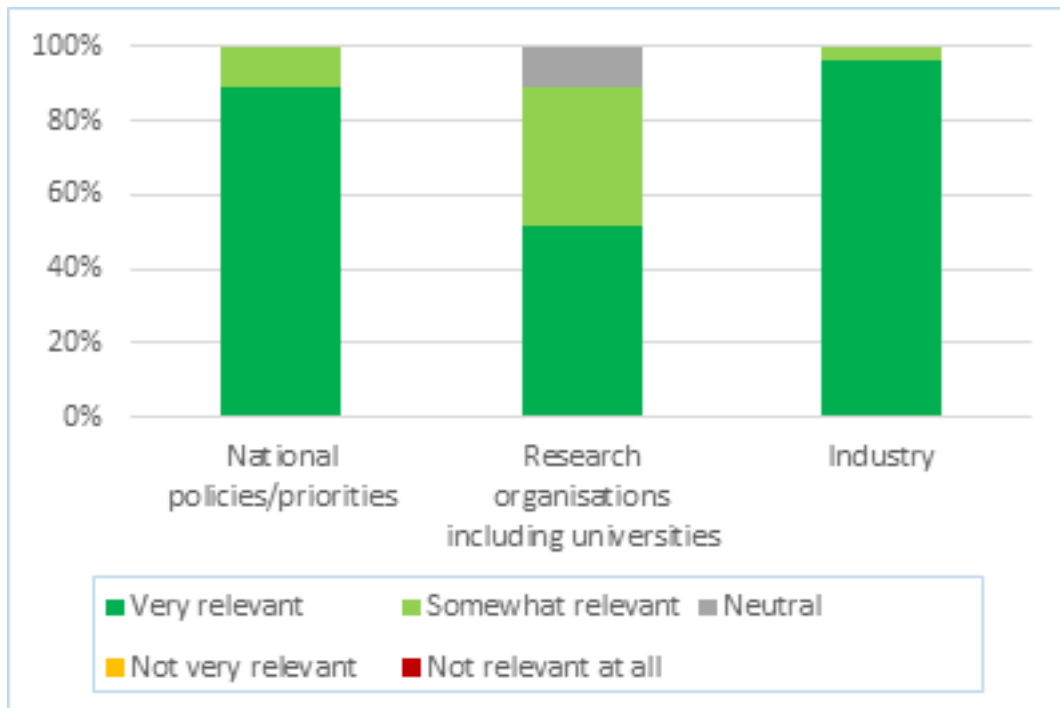
Some proposals are more mature than others

The analysis of feedback per partnership candidates suggests that some proposals are more mature, while others would need more time to determine the scope, objectives, partner composition and contribution and appropriate mode of implementation. This relates to in particular to partnerships with no predecessors and those where the main partners are public. It suggests that the proposals would need to be developed at different paces in order to achieve good quality, and thus, not all partnership proposals may be ready for implementation at the start of Horizon Europe.

B.3.2 Overall feedback for the initiative "Innovative SMEs"

For the initiative "Innovative SMEs" the following overall feedback was received from Member States. Overall the results of the consultation confirm the relevance of the proposed European Partnership on Innovative SMEs, with 89% considering it very and 11% somewhat relevant for their national policies and priorities, and 89% for their research organisations, including universities. All countries that provided feedback find the proposal relevant for their industry.

Figure 7: Relevance of the European Partnership on Innovative SMEs in the national context



On the question of existing national/regional R&I strategies, plans and/ or programmes in support of the proposed partnership, 28 countries report to have something in place. Dedicated R&I funding programmes or instruments are identified most frequently (96%), followed by national R&I strategies or plans (81%), national economic, sectoral strategy and/or plan with a strong emphasis on R&I (74%), regional R&I and/ or smart specialisation strategies (74%). 4 countries report other policies/ programmes, such as e.g. projects directly financed by the industry or Eureka joint strategy.

Under the aspects that could be reinforced in the proposal for this partnership that would increase its relevance for national priorities, delegations reiterate some aspects already present in the proposal e.g.: clear positioning of the proposed partnership in the EU and national R&I funding landscape, including clearer link with national and regional schemes, increasing focus on internationalisation and scaling up, increasing the target group to all innovative SMEs, and in this context facilitating participation of newcomers, and to broaden the support given to innovative SMEs.

The majority of countries (89%) express interest to join as a partner, and 4 countries have not yet decided. Existing national R&I programmes (70%) are identified as potential partners or contributors most frequently, followed by planned national R&I programmes (59%), and regional R&I and /or smart specialisation strategies (52%). In additional comments, several delegations clarify the types of contributions (including from Structural Funds), and reiterate the importance of the programme in supporting innovative SMEs from a national point of view. One delegation stresses it needs more information on the envisaged governance and funding model to decide on whether to join or not.

All countries express interest in having access to results produced in the context of the partnership.

Feedback on objectives and impacts

Overall there is a strong agreement (74% consider very relevant and 15% somewhat relevant) on the use of a partnership approach in support of innovative SMEs. There is strong agreement (92%) that the partnership is more effective in achieving the objectives and delivering clear impacts for the EU and its citizens, and to a lesser degree (74%) that

it would contribute to improving the coherence and synergies within the EU R&I landscape.

The feedback from countries indicate strong agreement with the proposed objectives at short, medium and long term (97%) and the expected scientific, economic and societal impacts at European level (92%). Almost all countries (93%) consider the impacts very or somewhat relevant in the national context. There is overall agreement with the envisaged duration of the proposed partnership with 96% of countries finding it adequate. In additional comments, some delegations emphasise the need to have more clarity on the timeframe of the proposed partnership (both start and duration) and one delegation raises concerns over too many similar activities and programs within Horizon Europe in the area.

Views on partners, contributions and implementation

Most countries (86%) agree on the type and composition of partners. In additional comments, individual delegations highlight the good track record of Eureka/ Eurostars in bringing together national funding bodies and coordinating calls, and welcome the broadening the target group.

At this stage 48% of the countries agree with the proposed contributions and level of commitments expected from partners, while 44% would need more information to assess this. In additional comments, individual replies highlight the need to ensure significant advance over the commitments reached for its predecessor Eurostars-2, to consider Cohesion Funds as national contributions, and to worries over the possible requirement (in case of Article 185) for the central management of financial contributions.

The proposed use of a co-funded or Article 185 TFEU approach is supported by 52% of the respondents, while 30% would need more information. In the additional comments, 14 countries indicate preference towards implementation the partnership based on Article 185 TFEU. Several countries stress they do not support a real common pot, but ask for further information on the "central management" of financial funds. Some countries express openness towards an appropriate central financial management if this excludes trans-border funding. Only one delegation expresses that both types of models for implementation are suitable for them, while another stresses the need to consider the results of the interim evaluation of Eurostars-2.

B.4 Targeted consultation of stakeholders related to the initiative "Innovative SMEs"

In addition to the consultation exercises coordinated by EC services, the external study thematic teams performed targeted consultations with businesses, research organisations and other partners on different aspects of potential European Partnerships.

B.4.1 Approach to the targeted consultation

The Interviews were planned to be an additional resource within the impact assessment done to the SME institutionalised partnership. In that order, interviews of different stakeholders involved in the Innovation field in Europe could give insides of the different issues and opportunities of the industry. Moreover, these interviews were also aimed to identify additional strengths and weakness of the current Eurostars programme and possible options.

Some questions were projected in order to get from the interviewees their thoughts of their condition in hypothetical scenarios, part that could enhance the analysis.

This process promoted inclusion in this assessment, principle of the European Union.

B.4.2 Overview of respondents to the targeted consultation

The targeted interviewees were identified by Innovation Experts as relevant in the promotion of Innovative SMEs in Europe and the World. The selection took into account their stakeholder category, country, working position (role), level of expertise, and involvement in the current and future partnership. Moreover, the selection aimed to keep a balance between number of Interviews per country and category of stakeholder background.

The list of potential interviewees was presented for its approval to the EC Steering Committee in the IA study inception report.

All the possible Interviewees were contacted via email. The invitation explained the reason of the interview, introduced the Endorsement Letter given by the European Commission (attached), and proposed 2 flexible dates for its realisation. In general, possible interviewees answered within the next 3-4 days. Reminders to possible interviewees were sent one week after the first invitation email parallely with a phone call invitation.

The table below shows the number of interviews that could be arranged, completed, declined/redirected, and the number of invitations without any kind of answer.

Table 16: Number of interviews per stakeholder category

Stakeholder category	Number	Share (%)
National research and innovation agencies	21	37.5
Public administration, ministries	7	12.5
Industrial associations	6	10
SMEs, Eurostars' beneficiaries	15	26.7
Academia, Higher Educational Institutions	5	8.9
Others (Financial beneficiaries)	2	3.5
TOTAL	56	100%

B.4.3 Key results/messages from the targeted consultation

In this section we give an overview of the stakeholders' opinions related to the policy options for the implementation of this initiatives. The full description of the stakeholders' input on the various topics discussed is provided in a separate deliverable (Data Report).

Assessment of the Policy Options: general preferences

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • More than half of the innovation agencies express preference for Art 185 with derogation; most of which also suggest the introduction of some changes. • This is because: (1) applicants and agencies are already familiar with the current scheme, and a change would be disruptive; (2) the overall management of the EUREKA Secretariat is generally appreciated; (3) requires the commitment of all parties involved (in contrast, the co-funded would be

Stakeholders	Opinions
	<p>standing on a MoU, which is not legally binding); (4) companies would not support the establishment of a light structure managed by the EC, but they would instead prefer to keep influence within the national agencies.</p> <ul style="list-style-type: none"> • In addition, Art. 185 brings political visibility for EUREKA members and also ensures more balanced geographic representativeness and continuity. • Moreover, the support of Council and Parliament will give Eurostars-3 higher political visibility, which is necessary for several countries to ensure the national support. • Co-programmed: only few interviewees consider it as a viable option; the majority raises scepticism, as this is seemed as a setting more appropriate for clear and monolithic industrial sectors. • Baseline, normal calls under HEU: several interviewees do not see that as feasible. • The role of the European Commission could be balanced if the programme is run by the innovation agencies, with the EC partner of that collaboration. • The EU should try to include privates into finance instruments. However including privates is difficult in this matter because there is no legal option to join private and public resources. • Several interviewees are sceptical that there should be created a common pot (central management for financial contribution) for a number of reasons, especially if considering that non H2020 countries will not be able to participate to it. • The new setting would need not to require SMEs to contribute more to the funding, as in this case the new instrument would not become appealing for businesses.
Industry associations	<ul style="list-style-type: none"> • Industry observes that SMEs prefer not to accept private funding for fear of losing control over the direction of the company, the project and the technology developed. • The EC should foresee and promote blended finance funding schemes.
Research Organisations, HEIs	<ul style="list-style-type: none"> • Art 185 with derogation and with some changes is the preferred option. • The main reason seems being that companies and the national authorities already know how the programme works, and should the rules changes, this might bring some applicants to not participate to the programme. • Some, however, appreciate the co-programmed seems to be more effective than the institutionalised, seen as heavy and not flexible. Moreover, it leverages on the key participation of the private sector, essential to produce innovation. • The EC should increase its role and provide new services: more brokerage events, market events (roadshows) where companies can showcase their products, and thematical calls for sectoral companies. • The EC can share good practice about proposal writing: application processes can be difficult, especially for companies that does not know what to put forward for experts. • Academia and related institutions claim that the EU is not providing sufficient financial contribution, specially to RTOs > this funding should be increased.
Public Authorities, Ministries	<ul style="list-style-type: none"> • Art 185 with derogation and with some changes is the preferred option. • It is advisable to keep stability to ensure participation. • MS hold some confluence in the programme implementation, which is seen as an advantage of the Art 185 solution. • Some countries do not appreciate the co-funding option because that would mean minor engagement from the Commission side, which is not advisable.
Financial intermediaries	<ul style="list-style-type: none"> • Art 185 with derogation is the preferred option. It would ensure participation, as done so far. • Co-programmed is not clear to both interviewees.

Stakeholders	Opinions
Eurostars' beneficiaries, SMEs	<ul style="list-style-type: none"> • Art 185 with derogation appears to be the preferred option. However, few interviewees express an option on this matter, limiting themselves to comment other aspects of the envisaged policy options. • SMEs tend to appreciate the Eurostars programme and do not wish changes in its management: do not wish it to become as H2020 (e.g. with baseline scenario) even though they would appreciate the creation of a Central management for financial contribution. • Few SMEs see that Horizon Europe can complement Eurostars; however, the two programmes should be kept separate. • Art 185 with derogation and with some changes is the preferred option. • It is advisable to keep stability to ensure participation. • MS hold some confluence in the programme implementation, which is seen as an advantage of the Art 185 solution. • Some countries do not appreciate the co-funding option because that would mean minor engagement from the Commission side, which is not advisable

Assessment of the Policy Options: Baseline

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • Some observe that not having a partnership would mean to include these initiatives as an additional stream of the EIC, which would require to provide additional funding to HEU, which seems not feasible given the latest positions of the MS.
Industry associations	<ul style="list-style-type: none"> • Industry observes that harmonisation is probably a need felt by the EC, but not so much by the businesses: those applying for Eurostars are probably not the same that apply for the SME-Instrument or other programmes.

Assessment of the Policy Options: governance

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • CENTRAL MANAGEMENT of financial resources, it is a very political discussion: the EC would like more CENTRALISATION, while MS and countries want SYNCHRONISATION. • Having a Central management would take control from participating countries and would not be justified for small budget projects such as those of Eurostars and would be prohibiting for SMEs to invest resources in managing two different contracts and two reporting . • "CENTRALISATION" is an EU paradigm, which does not rime with "intergovernmental" and does not meet the principles on which Eurostars stands
Industry associations	<ul style="list-style-type: none"> • Decentralised management is advantageous because applications and all reporting can be done in the national language.
Research Organisations, HEIs	<ul style="list-style-type: none"> • Decentralized financial management would decrease level of harmonisation of the scheme.
Eurostars' beneficiaries, SMEs	<ul style="list-style-type: none"> • Central management is welcome in case it will speed up procedures and avoid double reporting and application in different languages. • Decentralised is good because it makes national agencies providing direct support to SMEs.

Assessment of the Policy Options: openness

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • The advantage of the Eurostars programme for an SME is to collaborate with a Labs, research centres and universities outside their countries. • It must be avoided what happened under other FPs: the participation of an SME is just an excuse for universities to get funded by the EU. • In many cases, universities and companies are already working together, and they require somebody from a different sector. • Eurostars is also very useful because it helps the university to serve other companies in other areas or in other countries > then it serves also to transfer the technology. • Large companies often want to collaborate with SMEs, but more often just to acquire/buy the technology developed by the SME. Thus, Eurostars is very interesting for large companies if the SMEs in their consortia are funded by Eurostars. • Start-ups and SMEs in the IT sector (deep-tech) has been gaining further importance > thus, the need of using academia competences and resources is less important than for other sectors. > this might explain a lower involvement of the academia in the Eurostars projects. • Several agencies recognize that collaboration brings benefits to SMEs (market, know how, cost sharing) but also some risks linked to the management of their IPR. • Some interviewees observe that collaboration with the academia is particularly relevant in the development of their service/product, especially if the product is not well advanced.
Industry associations	<ul style="list-style-type: none"> • Universities: the collaboration with these business-minded universities might work; however, often the universities do not have the capacities nor the mentality to collaborate with businesses. • Research institutes are instead very much focused on supporting start-ups and companies.
Eurostars' beneficiaries, SMEs	<ul style="list-style-type: none"> • Funding for the academia varies country by country; some SMEs highlight that some countries privilege funding businesses over HEIs (and they approve this approach). Therefore, it is more difficult for the academia to engage in Eurostars projects.

Assessment of the Policy Options: impacts

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • Beneficial impacts on which the Eurostars-3 programme should focus are: (1) Increase cross-border collaboration (also with non-EU Member States); (2) Creates long-lasting relationships among the partners in the consortia; (3) Allow SMEs to access new markets and deepen long lasting relationship with international partners; (4) Contribute to the commercialization of products and services; (5) Strengthening the European Research Area; (6) Accelerate industrial transformation, stimulate the creation and scale-up of innovative SME, improve access to risk finance. • By improving market access; finding investment for follow up projects; having a joint investment programme with venture capitalists, mentors, and other groups, Eurostars could perform the role of an international incubator for some beneficiaries
Eurostars' beneficiaries, SMEs	<ul style="list-style-type: none"> • Development of products with an important technical base

Assessment of the Policy Options: project cycle

Stakeholders	Opinions
National Innovation Agencies	<ul style="list-style-type: none"> • New services to be added to the Eurostars: Coaching programmes for FTI and the SME-Instrument should be extended to Eurostars. • Some interviewees feel the need for an implementation structure in the current form of a Secretariat to ensure a better coordination of the project cycle and ensure proximity to the beneficiaries (if compared to the option of letting the EC run the project cycle). • Some interviewees advocate for closer links between the Secretariat with the EC, and an improved interlinkages of different EU programmes (e.g. successful Eurostars beneficiaries to participate in the EIC Accelerator, or to receive support from EIB). • Application process: The majority of the agencies observe that it is already simplified, and it is much lighter than in H2020. However, some potential improvements: (1) to be made a parallel process, not sequential processes; (2) in some cases some concepts can be confusing for not experts or first-timers applicants; (3) streamlined the administration, faster time to contract and simplify eligibility criteria. However, agencies recognize that each national funding body has its same timescale which cannot be harmonized. • Evaluation criteria: Within the national funding bodies, communication should be improved. Also in the evaluation, timing can differ in different between countries. Some interviewees urge to shift the focus of the evaluation from the companies to the project: thus, they welcome the change of criteria from 'R&D intensive' to 'Innovative project'. This change seems to broaden the scope of participation. The expert allocation and the eligibility check can be streamlined (also made more efficient with algorithms). The timing to set up the ranking might be reduced > Speeding up this process might speed up the funding. • Reporting: Currently this is done at two levels. The first is at the EUREKA level. The second at the National Agencies level. This double reporting scheme has language difficulties in the sense that Eureka requests for English reports and National reports need native language reports. None of the agencies see that as a problem; instead, they point out to the fact that the heavier reporting is required at national level, not at EU level. However, this is hardly going to be changed, as the funding schemes differ country by country. • Promotion: Some agencies suggest introducing EC-sponsored (and organised by the EC) events to promote the Eurostars and its results, such as roadshows with international participants. The promotion is done properly; however, the communication on the different EU programmes should be harmonised.
Industry associations	<ul style="list-style-type: none"> • Suggestion: the EU should invest in hiring consultants to help SMEs in the application process and the management of the administration and reporting
Research Organisations, HEIs	<ul style="list-style-type: none"> • The structures and requirements of the calls might be simplified, as they are too complex for the understanding of SMEs. • Improve the assessment to make it more transparent and more objective. • Evaluation process: seems pretty smooth. • Reporting: much lighter than with other EU programmes, such as H2020. • Overall, the promotion of the programme seems to be done pretty well by all the interviewed agencies.
Public Authorities, Ministries	<ul style="list-style-type: none"> • Urged to break down silos and provide new services to SMEs to encourage their applications and engagement.
Eurostars' beneficiaries, SMEs	<ul style="list-style-type: none"> • Application > Business pitch is really demanding; questions are redundant; difficult to find lot of information on very niche sectors, as requested by the EC. • Evaluation: some doubts are raised about the change in the selection criteria > it can increase participation of SMEs but also risk of lowering the standards of the applications, which risks of giving reasons for good SMEs to not participate in the programme. • Some SMEs find the evaluation process unclear and not transparent.

Stakeholders	Opinions
	<ul style="list-style-type: none"> • Sometimes, the business plan demanded by the EC is too demanding and detailed. • By enlarging the scope, the EC might NOT prevent SMEs living with grants only to participate (often) to the programme > the EC should focus more on creating even more specific criteria to assess what an innovative project is. • All interviewees express their frustration with the double reporting. Reporting should be made simpler and not redundant.

B.5 Open public consultation on the Candidate institutionalised European Partnerships

B.5.1 Approach to the open public consultation

The consultation was open to everyone via the EU Survey online system.⁶⁷ The survey contained two main parts and an introductory identification section. The two main parts collected responses on general issues related to European partnerships (in Part 1) and specific responses related to 1 or more of the 12 candidate initiatives (as selected by a participant).

The survey contained open and closed questions. Closed questions were either multiple choice questions or matrix questions that offered a single choice per line, on a Likert-scale. Open questions were asked to clarify individual choices.

The survey was open from 11 September till 12 November 2019. The consultation was available in English, German and French. It was advertised widely through the European Commission's online channels as well as via various stakeholder organisations.

The analysis of the responses was conducted by applying descriptive statistic methods to the answers of the closed questions and text analysis techniques to the analysis of the answers of the open questions. The keyword diagrams in this report have been created by applying the following methodology: First, the open answer questions were translated into English. This was followed by cleaning of answers that did not contain relevant information, such as "NA", "None", "no comment", "not applicable", "nothing specific", "cannot think of any", etc. In a third step, common misspellings were corrected, such as "excellence" instead of "excellence", or "partnership" instead of "partnership". Then, then raw open answers were tokenised (i.e. split into words), tagged into parts of speech (i.e. categorised as a noun, adjective, preposition, etc) and lemmatised (i.e. extraction of the root of each word) with a pre-trained annotation model in the English language. At this point, the second phase of manual data cleaning and correction of the automatic categorisation of words into parts of speech was performed. Finally, the frequency of appearance and co-occurrences of words and phrases were computed across the dataset and the different subsets (e.g. partnerships, stakeholder groups). Data visualisations were created based on that output.

The keyword graphs in the following sections have been built based on the relationships between words in the open responses of the survey participants. It features words that appear in the same answer either one after the other or with a maximum distance of two words between them. Each keyword is represented as a node and each co-occurrence of a pair of words is represented as a link. The size of the nodes and the thickness of the links vary according to the number of times that keywords are mentioned and their co-occurrence, respectively. In order to facilitate the visualisation of the network, the keyword graphs have been filtered to show the 50 most common co-occurrences. Although the keywords do not aim to substitute a qualitative analysis, they assist the identification of

⁶⁷ <https://ec.europa.eu/eusurvey/runner/ConsultationPartnershipsHorizonEurope>

the most important topics covered in the answers and their most important connections with other topics, for later inspection in the set of raw qualitative answers.

B.5.2 Overview of respondents to the open public consultation

Profile of respondents

In total, 1635 respondents filled in the questionnaire of the open public consultation. Among them, 272 respondents (16.64%) were identified to have responded to the consultation as part of a campaign (coordinated responses). Based on the Better Regulation Guidelines, the groups of respondents where at least 10 respondents provided coordinated answers were labelled as 'campaigns', segregated and analysed separately and from other responses. In total 11 campaigns were identified. In addition, 162 respondents in the consultation also display similarities in responses but in groups smaller than 10 respondents. Hence, these respondents were not labelled as campaigns and therefore were not analysed separately from the general analysis.

Among the 1635 respondents, 1178 (72.05%) completed the online consultation in English, 141 (8.62%) in German, 89 (5.44%) in French, 58 (3.55%) in Italian and 47 (2.87%) in Spanish, see Figure 8. Respondents that belong to the 11 campaigns follow the same pattern of language distribution, with English being the dominant language of respondents in that group. Table 17 shows that over 50% of respondents come from 4 Western and Southern European countries – Germany, Italy, France and Spain. Overall, the number of respondents from Eastern and Northern Europe is lower, while among non-EU countries the greater number of respondents come from Switzerland, Norway and Turkey, which are countries associated to the Framework Programme. In the group of respondents labelled as campaigns, most respondents are from Germany (48 respondents or 17.65%), France (39 respondents or 14.34%), Italy (37 respondents or 13.6%), Belgium (23 respondents or 8.46%), the Netherlands (21 respondents or 7.72%) and Spain (17 respondents or 6.25%). Hence, a similar pattern of country of origin is observed in the entire sample of respondents and for the campaigns.

Across all respondents 40.80% indicated to answer to the open public consultation in a public way (non-anonymous) and 20.67% of all respondents indicated their Transparency Register number.

Figure 8: Language of the consultation that selected respondents (N=1635) (non-campaign replies) Aggregation of responses of all candidate initiatives

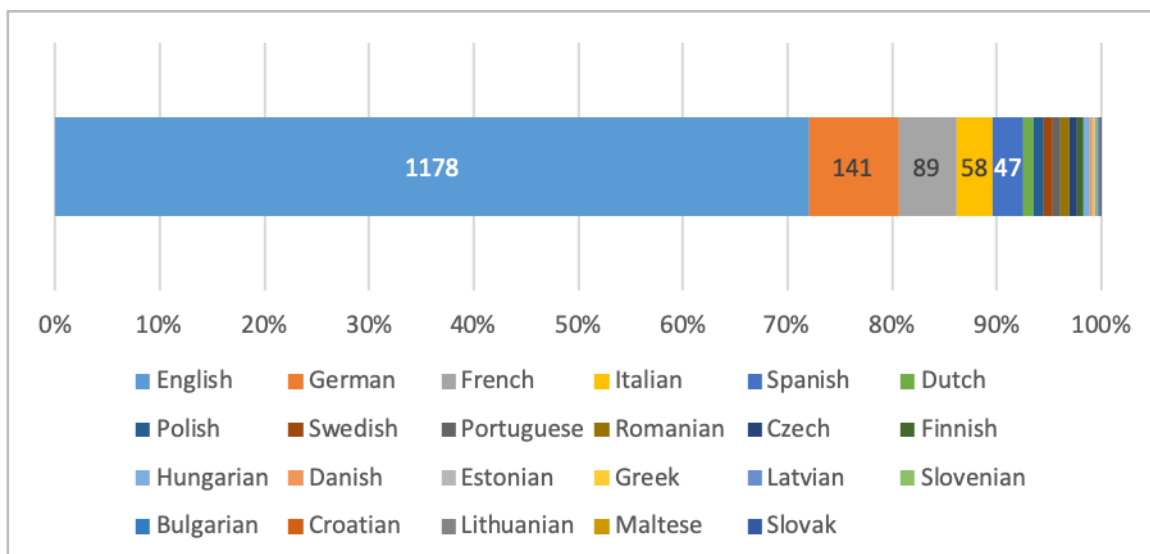


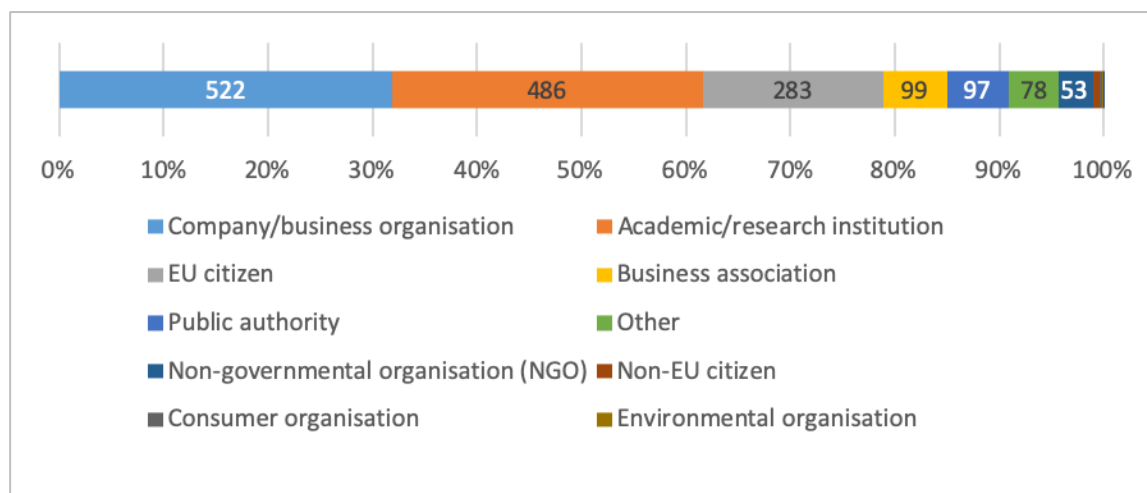
Table 17: Country of origin of respondents (N=1635)

Country	Number of respondents	Percentage of respondents
Germany	254	15.54%
Italy	221	13.52%
France	175	10.70%
Spain	173	10.58%
Belgium	140	8.56%
The Netherlands	86	5.26%
Austria; United Kingdom	61	3.73%
Finland	49	3.00%
Sweden	48	2.94%
Poland	45	2.75%
Portugal	32	1.96%
Switzerland	28	1.71%
Czechia	24	1.47%
Greece	23	1.41%
Norway; Romania	22	1.35%
Denmark	20	1.22%
Turkey	19	1.16%
Hungary	14	0.86%
Ireland	12	0.73%
United States	11	0.67%
Estonia; Slovakia; Slovenia	10	0.61%
Bulgaria; Latvia	9	0.55%
Bosnia and Herzegovina	7	0.43%
Lithuania	4	0.24%
Canada; Croatia; Israel	3	0.18%
China; Ghana; Iceland; Japan; Luxembourg; Morocco	2	0.12%
Bhutan; Botswana; Cyprus; Iran; Malta; Mexico; Moldova; Mongolia; Palestine; Russia; Serbia; South Africa; Tunisia; Ukraine; Uruguay	1	0.06%

According to Figure 9, the three biggest groups of respondents are companies and business organisations (522 respondents or 31.93%), academic and research institutions (486 respondents or 29.72%) and EU citizens (283 respondents or 17.31%). Business associations, representing multiple businesses, were the fourth largest responding group (99 respondents or 6.05%), no other types of associations were presented amongst the selectable options for respondents. Among the group of respondents that are part of campaigns, most respondents are provided by the same groups of stakeholders, namely

companies and business organisations (121 respondents or 44.49%), academic and research institutions (54 respondents or 19.85%) and EU citizens (42 respondents or 15.44%).

Figure 9: Type of respondents (N=1635) (non-campaign replies) Aggregation of responses of all candidate initiatives



Respondents were asked to indicate the organisational size of the companies, organisations and institutions they work for. Based on Table 18, a greater number of respondents work in large companies and business organisations (295 respondents out of 522 or 56.51%) and large academic and research institutions (348 respondents out of 486 or 71.60%). A greater number of respondents that are employed by business associations and NGOs indicated an organisation size of 1 to 9 employees. Among the group of respondents that are marked as campaigns, a greater number of respondents work in large companies and business organisations (82 respondents out of 121 or 67.77%) and academic and research institutions (39 out of 54 respondents or 72.22%).

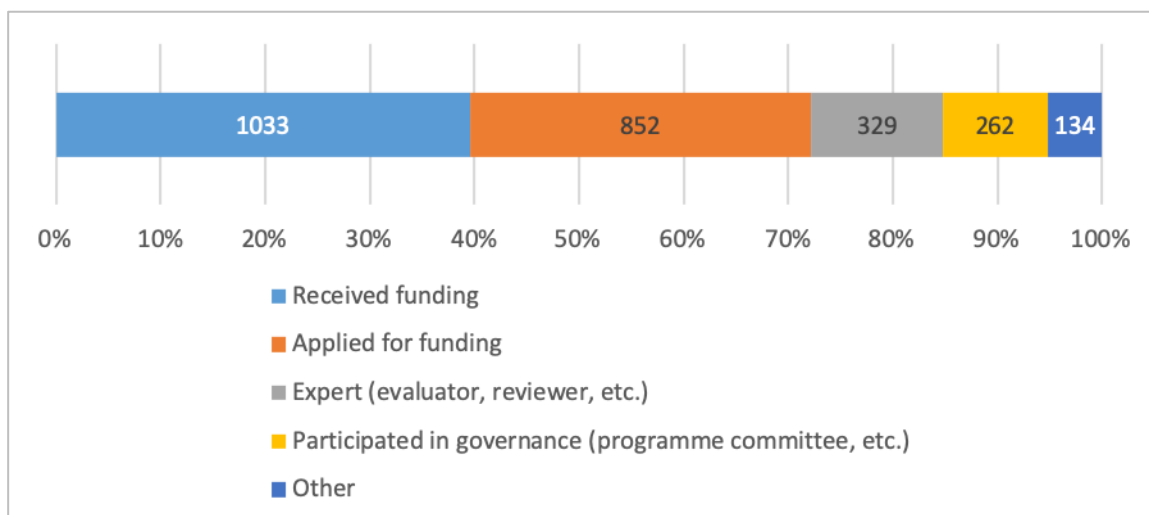
Table 18: Size of organisations that represent consultation respondents (N=1635)

Type of respondents' organisations	Organisation size			
	Large (250 employees or more)	Medium (50 to 249 employees)	Small (10 to 49 employees)	Micro (1 to 9 employees)
Company/business organisation	295	66	90	71
Academic/research institution	348	95	31	12
Business association	15	6	34	44
Public authority	58	33	6	0
Non-governmental organisation (NGO)	7	9	11	26
Consumer organisation	1	0	2	1
Environmental organisation	0	0	1	0
Trade union	0	0	1	0
Other	24	16	19	19

Among all consultation respondents, 1303 (79.69%) have been involved in the on-going research and innovation framework programme Horizon 2020 or the preceding Framework Programme 7, while 332 respondents (20.31%) were not. In the group of campaign respondents, the share of those who were involved in these programmes is higher (245 respondents out of 272 or 90.07%) than in the group of non-campaign respondents (1058 out of 1363 or 77.62%). When respondents that participated in the Horizon2020 or in the preceding Framework Programme 7 were asked to indicate in which capacity they were involved in these programmes, the majority stated that they were a beneficiary (1033 respondents or 39.58%) or applicant (852 respondents or 32.64%).

The main stakeholder categories, e.g. companies/business organisation, academic/research institutions, etc., show a similar distribution across the capacities in which they 'have been involved in Horizon 2020 or in the Framework Programme 7' as the overall population of consultation respondents (see distribution in Figure 10). However, a few stakeholder categories have mainly been involved in the capacity of "Received funding" and/or "Applied for funding", this applies to business associations, NGOs and public authorities.

Figure 10: Capacity in which respondents were involved in Horizon 2020 or in the Framework Programme 7 (N=1303)(non-campaign replies) Aggregation of responses of all candidate initiatives, multiple options allowed



Among those who have been involved in the on-going research and innovation framework programme Horizon 2020 or the preceding Framework Programme 7, 1035 respondents (79.43%) are/were involved in a partnership. The share of respondents from campaigns that are/were involved in a partnership is higher than for non-campaign respondents, 89.80% versus 77.03% respectively. The list of partnerships under Horizon 2020 or its predecessor Framework Programme 7 together with the numbers, percentages of participants is presented in Table 19, the table also shows the key stakeholder categories for each partnership.

Most consultation respondents participated in the following partnerships: Fuel Cells and Hydrogen 2 (FCH2) Joint Undertaking, Clean Sky 2 Joint Undertaking, European Metrology Programme for Innovation and Research (EMPIR) and in Bio-Based Industries Joint Undertaking. The comparison between the non-campaign and campaign groups of respondents shows that the overall distribution is quite similar. However, there are some differences. For the campaign group almost a half of respondents is/was involved in the Fuel Cells and Hydrogen 2 (FCH2) Joint Undertaking, a higher share of campaign respondents is/was participating in Clean Sky 2 Joint Undertaking and in Single European Sky Air Traffic Management Research (SESAR) Joint Undertaking.

Table 19: Partnerships in which consultation respondents participated (N=1035)

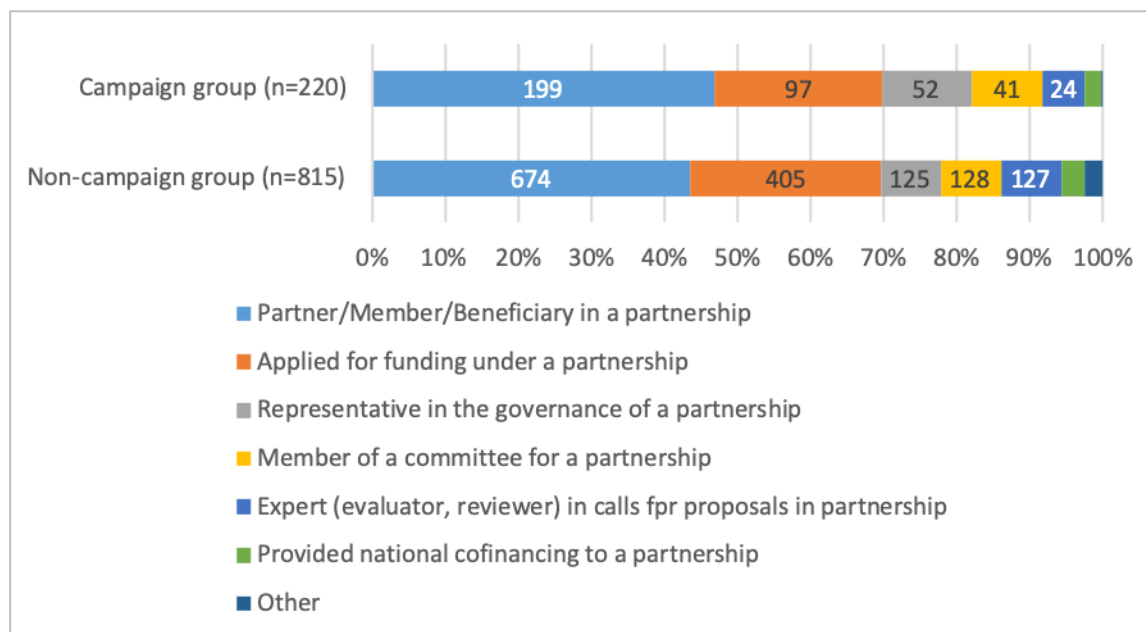
Name of the partnership	Number and % of respondents from both groups (n=1035)	Number and % of respondents from a non-campaign group (n=815)	Academic/research institutions	Business associations	Company/business organisations	Company/business organisations	EU citizens	NGOs	Public authority
Fuel Cells and Hydrogen 2 (FCH2) Joint Undertaking	354 (33.33%)	247 (30.31%)	97	9	37	43	41	8	5
Clean Sky 2 Joint Undertaking	195 (18.84%)	145 (17.79%)	57	2	10	27	37	1	7
European Metrology Programme for Innovation and Research (EMPIR)	150 (14.49%)	124 (15.21%)	64	0	13	9	14	2	19
Bio-Based Industries Joint Undertaking	142 (13.72%)	122 (14.97%)	39	8	20	27	14	1	6
Shift2Rail Joint Undertaking	124 (11.98%)	101 (12.40%)	31	7	5	31	14	3	7
Electronic Components and Systems for European Leadership (ECSEL) Joint Undertaking	111 (10.72%)	88 (10.80%)	42	2	7	20	12	0	5
Single European Sky Air Traffic Management Research (SESAR) Joint Undertaking	66 (6.38%)	46 (5.64%)	10	3	3	20	3	2	3
5G (5G PPP)	53 (5.12%)	47 (5.77%)	20	1	6	14	5	0	1
Eurostrars-2 (supporting research-performing small and medium-sized enterprises)	44 (4.25%)	40 (4.91%)	17	0	6	1	7	0	6

Name of the partnership	Number and % of respondents from both groups (n=1035)	Number and % of respondents from a non-campaign group (n=815)	Academic/research institutions	Business associations	Company/business organisations	Company/business organisations	EU citizens	NGOs	Public authority
Innovative Medicines Initiative 2 (IMI2) Joint Undertaking	37 (3.57%)	35 (4.29%)	18	2	3	3	2	4	3
Partnership for Research and Innovation in the Mediterranean Area (PRIMA)	28 (2.71%)	26 (3.19%)	15	0	3	1	2	0	2
European and Developing Countries Clinical Trials Partnership	25 (2.42%)	24 (2.94%)	12	0	1	2	3	3	2
Ambient Assisted Living (AAL 2)	22 (2.13%)	21 (2.58%)	11	2	1	1	3	0	3
European High-Performance Computing Joint Undertaking (EuroHPC)	22 (2.13%)	18 (2.21%)	6	0	2	3	5	0	2

When respondents were asked in which role(s) they participate(d) in a partnership(s), over 40% indicated that they act(ed) as partner/member/beneficiary in a partnership (see Figure 11). The second largest group of respondents stated that they applied for funding under a partnership. The roles selected by non-campaign and campaign respondents are similar.

The few respondents that selected "Other" as their role were provided with the opportunity to outline their role. A total of 25 people did provided description. The answers provided were very varied and could not be clustered in sub-groups, a few examples are: former communication and stakeholder relationship officer, chair of steering board, system engineer, grant manager, Joint Programming Initiative (JPI), or a role in advocacy of the partnership.

Figure 11: Role of respondents in a partnership (N=1035) (non-campaign replies) Aggregation of responses of all candidate initiatives



In the open public consultation respondents could provide their views on each of the candidate Institutionalised European Partnerships, and each respondent could select multiple partnerships to provide their views on. The table below presents the number and percentage of respondents for each partnership. It is visible that the majority of respondents (31.37%) provided their views on the Clean Hydrogen candidate partnership. More than 45% of respondents from the campaigns selected this partnership. Around 15% of all respondents provided their views for the candidate partnerships European Metrology, Clean Aviation and Circular bio-based Europe. The share of respondents in the campaign group that chose to provide views on the Clean Aviation candidate partnership is of 20%. The smallest number of respondents provided opinions on the candidate initiative 'EU-Africa research partnership on health security to tackle infectious diseases – Global Health'.

Table 20: Future partnerships for which consultation respondents provide responses (N=1613)

Name of the candidate Institutionalised European partnership	Number and % of respondents from both groups (n=1613)	Number and % of respondents from a non-campaign group (n=1341)	Academic/research institutions	Business associations	Company/business organisations (<250)	Company/business organisations (250+)	EU citizens	NGOs	Public authority
Clean Hydrogen	506 (31.37%)	382 (28.49%)	123	21		55	74	8	13
European Metrology	265 (16.43%)	225 (16.78%)	112	3	21	11	34	3	28
Clean Aviation	246 (15.25%)	191 (14.24%)	57	5	21	34	54	3	8
Circular bio-based Europe: sustainable Innovation for new local value	242 (15%)	215 (16.03%)	63	19	36	35	31	7	13

Name of the candidate Institutionalised European partnership	Number and % of respondents from both groups (n=1613)	Number and % of respondents from a non-campaign group (n=1341)	Academic/research institutions	Business associations	Company/business organisations (<250)	Company/business organisations (250+)	EU citizens	NGOs	Public authority
from waste and biomass									
Transforming Europe's rail system	184 (11.41%)	151 (11.26%)	29	14	23	39	31	2	7
Key Digital Technologies	182 (11.28%)	162 (12.08%)	55	13	20	22	35	5	7
Innovative SMEs	111 (6.88%)	110 (8.20%)	19	12	39	4	14	4	10
Innovative Health Initiative	110 (6.82%)	108 (8.05%)	35	6	9	12	16	16	5
Smart Networks and Services	109 (6.76%)	107 (7.98%)	34	9	12	17	21	2	6
Safe and Automated Road Transport	108 (6.70%)	102 (7.61%)	25	12	11	19	10	3	9
Integrated Air Traffic Management	93 (5.77%)	66 (4.92%)	8	7	4	24	9	2	7
EU-Africa research partnership on health security to tackle infectious diseases – Global Health	49 (3.04%)	47 (3.50%)	15	2	4	3	12	6	4

Campaigns per candidate Institutionalised European Partnership

As was mentioned above, 11 campaigns were identified, the largest of them includes 57 respondents. The table below presents the campaigns that replied for each candidate partnership. As presented, the candidate Institutionalised Partnership Clean Hydrogen has the highest number of campaigns, namely 5. A few partnerships, such as Innovative SMEs, Smart Networks and Systems, were not targeted by campaigns. Some campaign respondents decided to provide opinions about several partnerships, therefore, campaign #2 and #6 feature in several partnerships.

Table 21: Overview of campaigns across partnerships

Name of the candidate Institutionalised European partnership	Number of a campaign group (total number of respondents in a campaign)	Number of respondents that provided views about a partnership
Clean Hydrogen	Campaign #1 (57 respondents)	57 respondents
	Campaign #2 (41 respondents)	25 respondents
	Campaign #7 (18 respondents)	18 respondents
	Campaign #9 (14 respondents)	13 respondents
	Campaign #11 (10 respondents)	9 respondents
Clean Aviation	Campaign #2 (41 respondents)	17 respondents
	Campaign #6 (19 respondents)	19 respondents
	Campaign #8 (14 respondents)	13 respondents
Integrated Air Traffic Management	Campaign #2 (41 respondents)	10 respondents
	Campaign #6 (19 respondents)	12 respondents
European Metrology	Campaign #3 (36 respondents)	35 respondents
Circular bio-based Europe: sustainable Innovation for new local value from waste and biomass	Campaign #5 (20 respondents)	20 respondents
Transforming Europe's rail system	Campaign #4 (31 respondents)	29 respondents
Key Digital Technologies	Campaign #10 (12 respondents)	12 respondents
Innovative SMEs	-	-
Innovative Health Initiative	-	-
Smart Networks and Services	-	-
Safe and Automated Road Transport	-	-
EU-Africa research partnership on health security to tackle infectious diseases – Global Health	-	-

B.5.3 Responses to the open public consultation at programme level

The following section of the report presents the analysis of responses at programme level, meaning all respondents (excluding campaigns) were included, independent of which candidate European Partnerships respondents selected to provide their views on. The results for responses as part of campaigns are presented separately.

Characteristics of future candidate European Partnerships

Respondents were asked to assess what areas, objectives, aspects need to be in the focus of the future European Partnerships under Horizon Europe and to what extent. According to Figure 12, a great number of respondents consider that a significant contribution by the

future European Partnerships is 'fully needed' to achieve climate-related goals, to the development and effective deployment of technology and to EU global competitiveness in specific sectors/domains. Overall, respondents' views reflect that many aspects require attention of the Partnerships. The least attention should be paid to responding towards priorities of national, regional R&D strategies, including smart specialisation strategies, according to respondents.

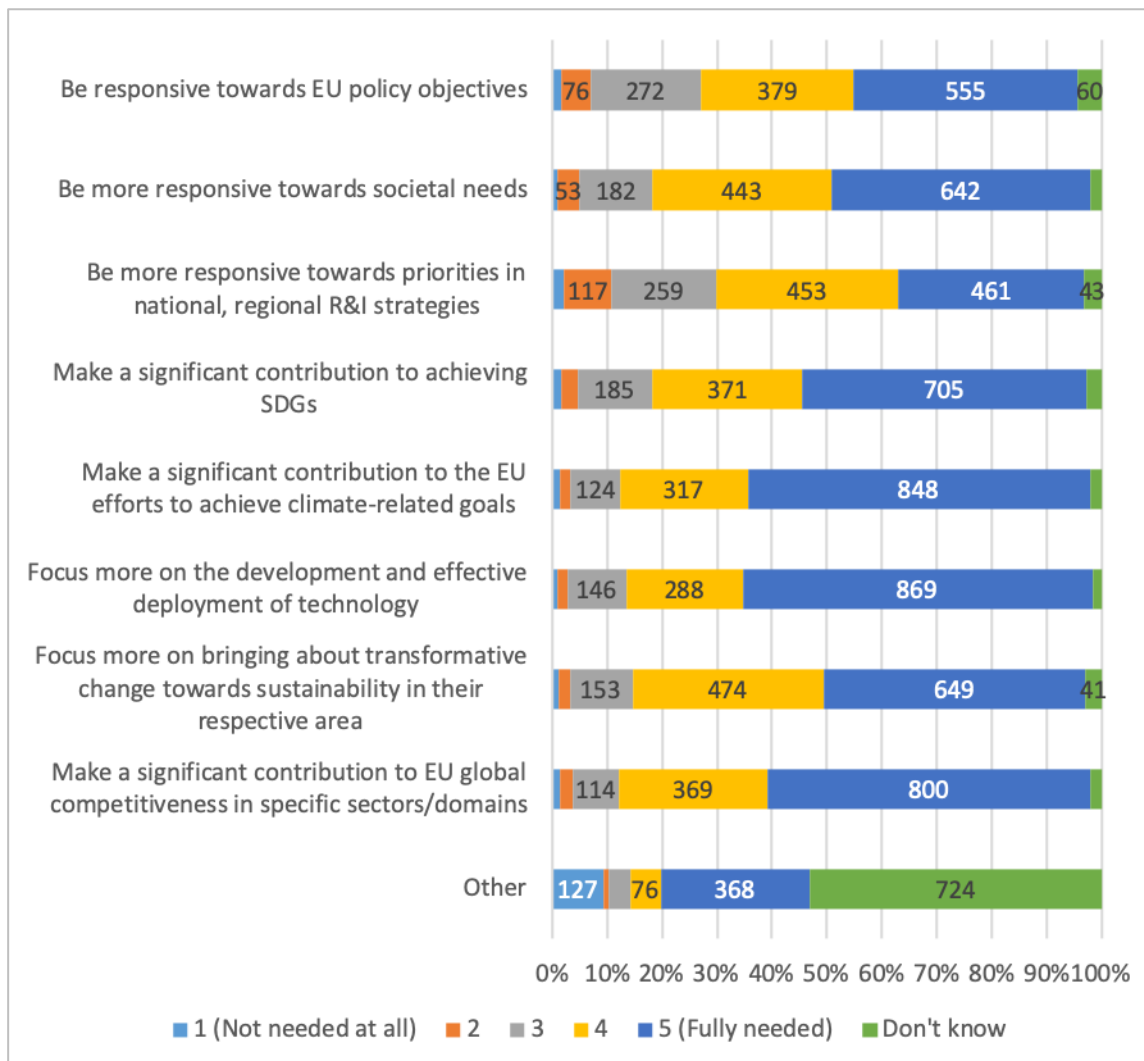
Overall, only minor differences can be found between the main stakeholder categories. Academic/research institutions value the responsiveness towards EU policy objectives and focus on development and effective deployment of technology a little less than other respondents. Business associations, however, find that the future European Partnerships under Horizon Europe should focus a little bit more on the development and effective deployment of technology than other respondents. Furthermore, business associations, large companies as well as SMEs (companies with less than 250 employees) value role of the future European Partnerships for significant contributions to EU global competitiveness in specific sectors domains a little higher than other respondents. Finally, both NGOs and Public authorities put a little more emphasis on the role of the future European Partnerships for significant contributions to achieving the UN SDGs.

The views of citizens (249, or 18.27%), both EU and non-EU citizens, that participated in the open public consultation do not reflect significant differences with other types of respondents. However, respondents that are/were directly involved in a partnership under Horizon 2020 or its predecessor Framework Programme 7 assign a higher importance of the future European Partnerships to be more responsive towards EU policy objectives and to make a significant contribution to achieving the UN's Sustainable Development Goals.

Among 272 respondents that are classified as **campaigns**, the majority (86.76%) indicated that the future European Partnerships should focus more on the development and effective deployment of technology. Other categories of presented needs that received a high score among many campaign respondents are the need to make a significant contribution to the EU efforts to achieve climate-related goals, Sustainable Development Goals and to EU global competitiveness in specific sectors/domains. The least number of campaign respondents valued the need to be more responsive towards priorities in national, regional R&I strategies (54 respondents gave a score "5 Fully needed", or 19.85%) and to be more responsive towards societal needs (71 respondents gave a score "5 Fully needed", or 26.10%).

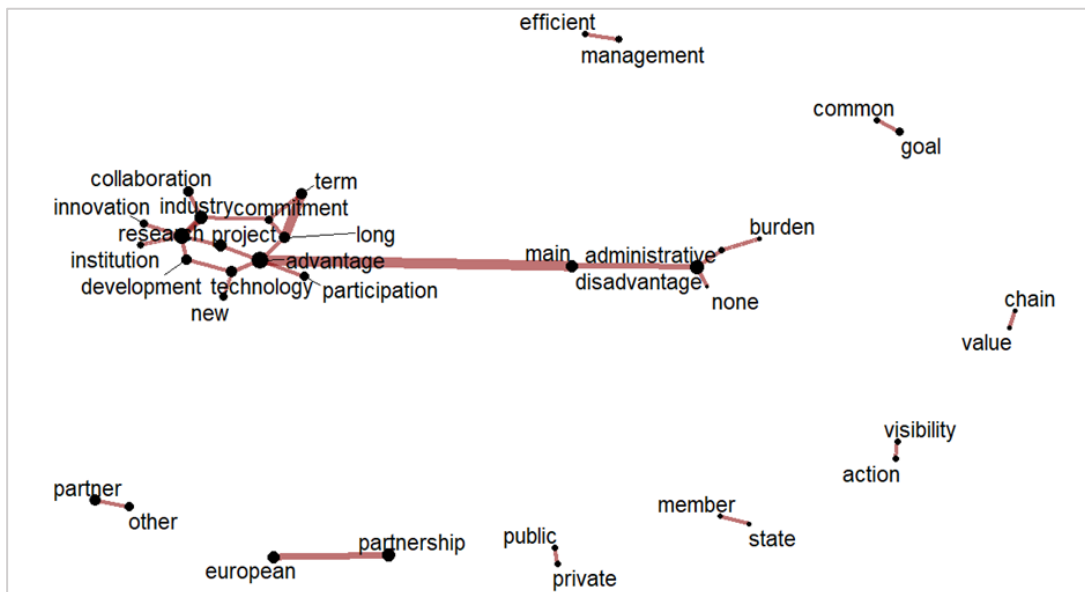
As for non-campaign respondents, we find only minor differences between the main stakeholder categories amongst campaign respondents. Academic/research institutions indicated that the future European Partnerships need to focus a little less on development and effective deployment of technology than other respondents. On the contrary, large companies find the focus on the development and effective deployment of technology a little more needed than other respondents, as do public authorities. Furthermore, large companies feel responsiveness towards priorities in national, regional R&I strategies is a little less needed than other respondents. Public authorities, however, value the responsiveness towards societal needs and priorities in national, regional R&I strategies more than others.

Figure 12: To what extent do you think that the future European Partnerships under Horizon Europe need to (N=1363) (non-campaign replies) Aggregation of responses of all candidate initiatives



The analysis of the open answers provided to explain the “Other” field show that many respondents included the set-up of public-private European partnerships and the link between industrial policy and international competition and cooperation (see Figure 13). This is confirmed through qualitative analysis of answers, many of which mention the importance of collaboration and integration of relevant stakeholders to tackle main societal challenges and to contribute to policy goals. Against this backdrop, fragmentation of funding and research efforts across Europe should be avoided. Additionally, several respondents suggested that faster development and testing of technologies, acceleration of industrial innovation projects, science transfer and market uptake are deemed as priorities. Next to that, many respondents provided answers related to the fields of hydrogen and the energy transition, which corresponds to the high number of respondents that provided answers to the candidate European Partnership specific questions related to these topics.

Figure 14: What would you see as main advantages and disadvantages of participation in an Institutionalised European Partnership (as a partner) under Horizon Europe? (non-campaign replies) Aggregation of responses of all candidate initiatives, 30 most common co-occurring keywords (N=1551)



When asked about the main advantages and disadvantages of participation in an Institutionalised European Partnership (as a partner) under Horizon Europe, the following points were mentioned by respondents that are classified as campaigns:

Advantages:

- Long term commitment, stability, and visibility in financial, legal, and strategic terms
- Participation of wide range of relevant stakeholders in an ecosystem (large/small business, academics, researchers, experts, etc.)
- Complementarity with other (policy) initiatives at all levels EU, national, regional
- Efficient and effective coordination and management
- High leverage of (public) funds
- Some innovative field require high levels of international coordination/standardisation (at EU/global level)
- Ability to scale up technology (in terms of TRL) through collaboration
- Networking between members
- Direct communication with EU and national authorities

Disadvantages:

- Slow processes
- System complexity
- Continuous openness to new players should be better supported as new participants often bring in new ideas/technologies that are important for innovation
- Lower funding percentage compared to regular Horizon Europe projects
- Cash contributions
- Administrative burdens
- Potential for IPR constraints

Relevance of EU level efforts to address problems in selected areas of Partnerships

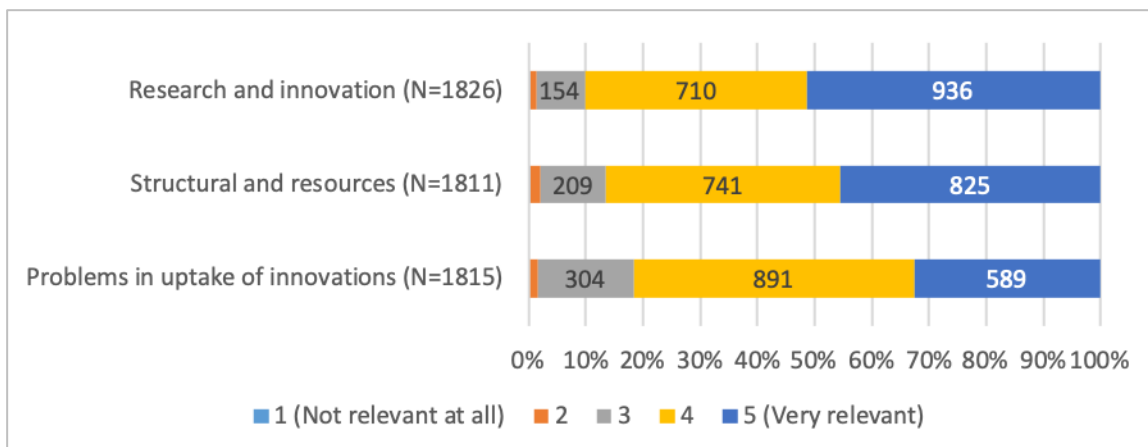
Per candidate European Partnership respondents were asked to rate the relevance of partnership specific problems in three main areas: Research and innovation problems, Structural and resource problems and Problems in the uptake of innovations. To aggregate results the average of the responses on partnership specific problems were calculated.

As presented in Figure 15, research and innovation related problems were rated as most relevant by the respondents across all candidate initiatives, followed by structural and resources problems and problems in the uptake of innovations. Overall, all three areas were deemed (very) relevant across the partnerships, as more than 80% of respondents found these challenges (very) relevant.

Only minor differences were found between the main stakeholder categories of respondents. Research and innovation problems were found slightly more relevant by academic/research institutions, yet slight less relevant by large companies and SMEs. Structural and resource problems were indicated as slightly more relevant by NGOs, but slightly less by academic/research institutions. While both NGOs and public authorities find it slightly more relevant to address problems in uptake of innovation than other respondents.

The views of citizens, both EU and non-EU citizens, are the same as other respondents (no significant differences). Respondents that are/were directly involved in a current/preceding partnership (Horizon 2020 or Framework Programme 7) find, however, the uptake of innovation problems slightly more relevant than other respondents.

Figure 15: To what extent do you think this is relevant for research and innovation efforts at EU level to address the following problems in relation to the candidate partnership in question? (non-campaign replies) Aggregation of responses of all candidate initiatives

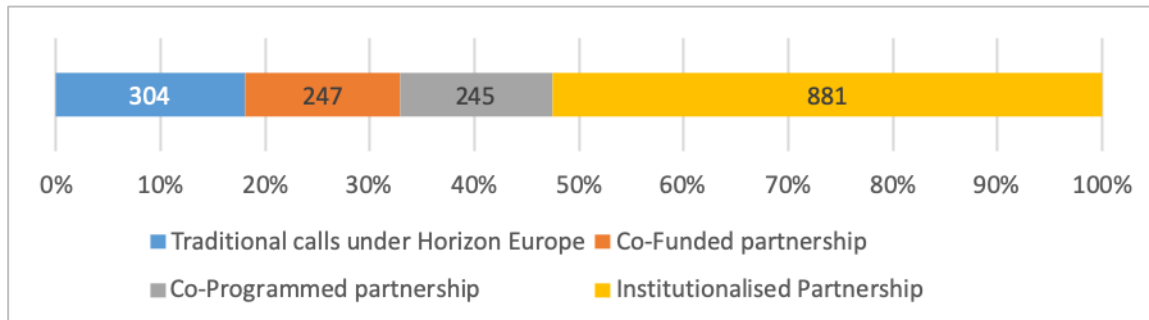


Horizon Europe mode of intervention to address problems

After providing their views on the relevance of problems, respondents were asked to indicate how these challenges could be addressed through Horizon Europe intervention. As shown in Figure 16, just over 50% of all respondents indicated that institutionalised partnerships were the best fitting intervention, however, relatively strong differences between stakeholder categories were found. The intervention of institutionalised partnerships was indicated more by business associations and large companies, but less by academic/research institutions and SMEs. While academic/research institutions valued traditional calls more often, this was not the case for business associations, large companies and public authorities. Public authorities indicated a co-programmed intervention more often than other respondents. Citizens, compared to other respondents, indicated slightly less often that institutionalised partnerships were the best fitting intervention. Respondents that are/were directly involved in a current/preceding

partnership, however, selected the institutionalised partnership intervention in far higher numbers (nearly 70%).

Figure 16: In your view, how should the specific challenges described above be addressed through Horizon Europe intervention? (non-campaign replies) Aggregation of responses of all candidate initiatives



When asked to reflect on their answers, respondents that pointed to the need for using the “institutionalised partnership” intervention mentioned the long-term commitment of collaboration, a common and ambitious R&I strategy as well as the overall collaboration between industry and research institutions. Respondents that referred to possible approaches, sometimes gave examples of good experiences in with other interventions:

- Traditional calls because of their flexibility and integration of a wide range of actors, as long as the evaluation panels do not deviate from the policy premier. This was mentioned by 94 participants, evenly distributed across companies (25 of them), academics (26) and EU citizens (25).
- Co-funded partnership, as a mechanism to ensure that all participants take the effort seriously, while allowing business partnerships to develop. This approach was deemed suitable based on previous experiences with ERANETs. This was raised by 84 participants, 36 of them academic respondents, 18 companies and 16 EU citizens.
- Co-programmed partnerships to tackle the need to promote and engage more intensively with the private sector. This was mentioned by 97 participants, most of them companies (34), followed by academics (22), business associations (15) and EU citizens (11).

Relevance of a set of elements and activities to ensure that the proposed European Partnership would meet its objectives

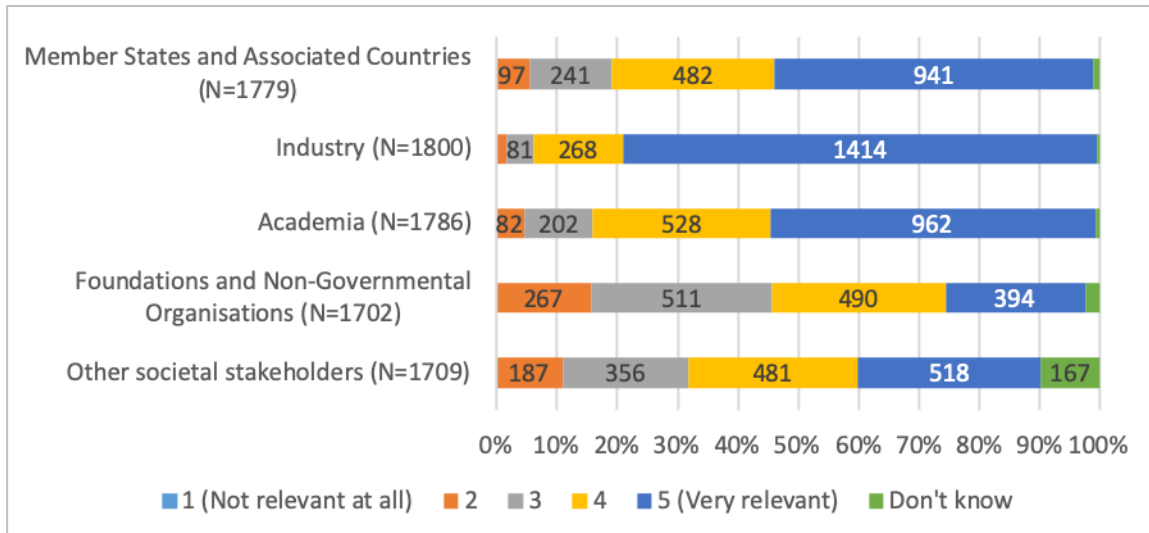
Setting joint long-term agendas

Respondents were asked how relevant it is for the proposed European Partnerships to meet their objectives to have a strong involvement of specific stakeholder groups in setting joint long-term agenda. As presented in Figure 17, collectively all respondents see stakeholders from industry as the most relevant, followed by academia and governments (Member States and Associated Countries). The involvement of foundations and NGOs as well as other societal stakeholders were, however, still found to be (very) relevant by more than 50% of the respondents.

When looking at the differences between the answers of the main stakeholder categories only minor differences could be found. Overall, it could be observed that most respondents indicated the stakeholder group they belong to themselves or that represent them as relevant to involve. Academic/research institutions find it more relevant to involve academia and less relevant to involve industry when compared to other respondents. The other way around large companies, SMEs and business associations find it more relevant to involve industry and less relevant to involve academia, Member States and Associated Countries and NGOs. The involvement of Member States and Associated Countries was found more relevant by academic/research institutions and public authorities. NGOs also

values their own involvement and those of other societal stakeholders more than other respondents. views of citizens also show a slightly higher relevance for foundations and NGOs. This is less so the case for respondents that are/were directly involved in a current/preceding partnership (most predominantly companies and academia).

Figure 17: In your view, how relevant are the following elements and activities to ensure that the proposed European Partnership would meet its objectives - Setting joint long-term agenda with strong involvement of: (non-campaign replies)
Aggregation of responses of all candidate initiatives

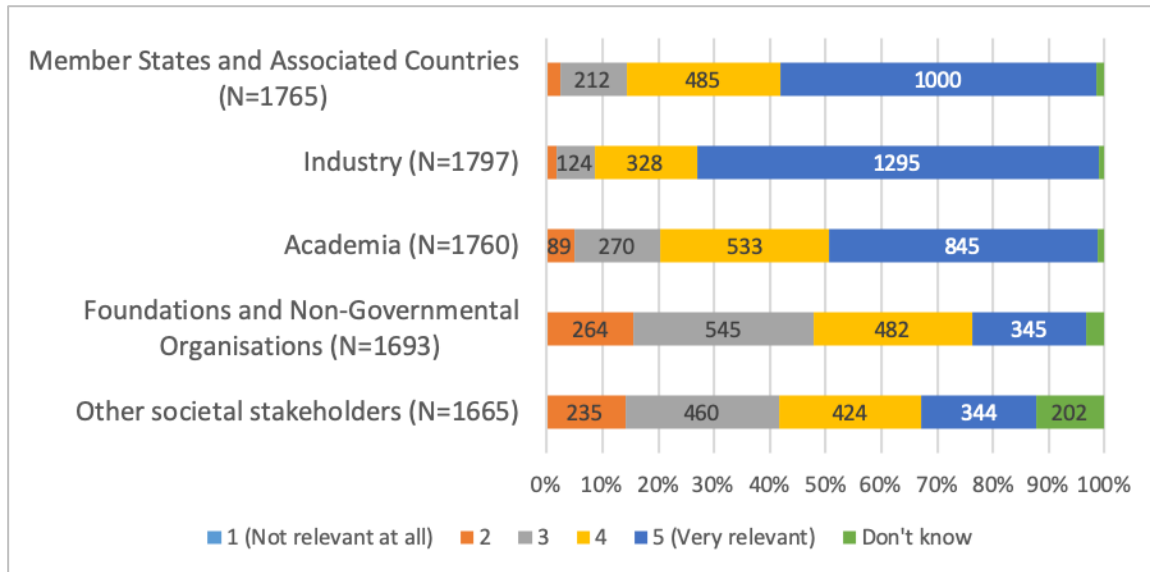


Pooling and leveraging resources through coordination, alignment and integration with stakeholders

Respondents were also asked how relevant it is for the proposed European Partnership to meet its objectives to pool and leverage resources (financial, infrastructure, in-kind expertise, etc.) through coordination, alignment and integration with specific groups of stakeholders. As shown in Figure 18-similarly as for the previous questions-, respondents also see stakeholders from industry as the most relevant, followed by academia and governments (Member States and Associated Countries). The involvement of foundations and NGOs as well as other societal stakeholders are also still found to be (very) relevant for more than 50% of the respondents.

As for the question on setting joint long-term agendas, most stakeholder categories valued their own involvement higher than other respondents – although also here differences between stakeholder categories were minor. As such, academic/research institutions see the relevance of academia higher, while large companies, SMEs and business association indicated a lower relevance of academia than other respondents. Similarly, these private sector stakeholders valued the relevance of industry higher than others while valuing the relevance of NGOs and other societal stakeholders less. NGOs value themselves and other societal stakeholders however higher than other respondents, and also public authorities indicated a higher relevance for Member States and Associated Countries than other respondents. Citizens mainly put more emphasis on the role of NGOs and other societal stakeholders than other respondents.

Figure 18: In your view, how relevant are the following elements and activities to ensure that the proposed European Partnership would meet its objectives – Pooling and leveraging resources (financial, infrastructure, in-kind expertise, etc.) through coordination, alignment and integration with: (non-campaign replies) Aggregation of responses of all candidate initiatives

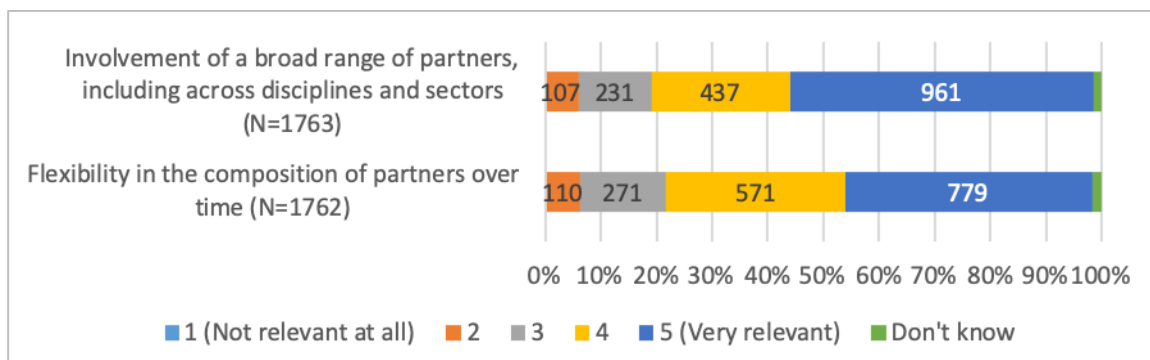


Composition of the partnerships

Regarding the composition of the partnership most respondents indicated that for the proposed European Partnership to meet its objectives the composition of partners needs to be flexible over time and that a broad range of partners, including across disciplines and sectors, should be involved (see Figure 19).

When comparing stakeholder groups only minor differences were found. Academic/research institutions and public authorities found the involvement of a broad range of partners and flexibility in the composition of partners over time slightly more relevant than other respondents, while large companies found both less relevant. SMEs mainly found the flexibility in the composition of partners over time less relevant than other respondents, while no significant differences were found regarding the involvement of a broad range of partners. Citizens provided a similar response to non-citizens. Respondents that are/were directly involved in a current/preceding partnership, when compared to respondents not involved in a current/preceding partnership, indicated a slightly lower relevance of the involvement of a broad range of partners and flexibility in the composition of partners over time.

Figure 19: In your view, how relevant are the following elements and activities to ensure that the proposed European Partnership would meet its objectives – Partnership composition (non-campaign replies) Aggregation of responses of all candidate initiatives

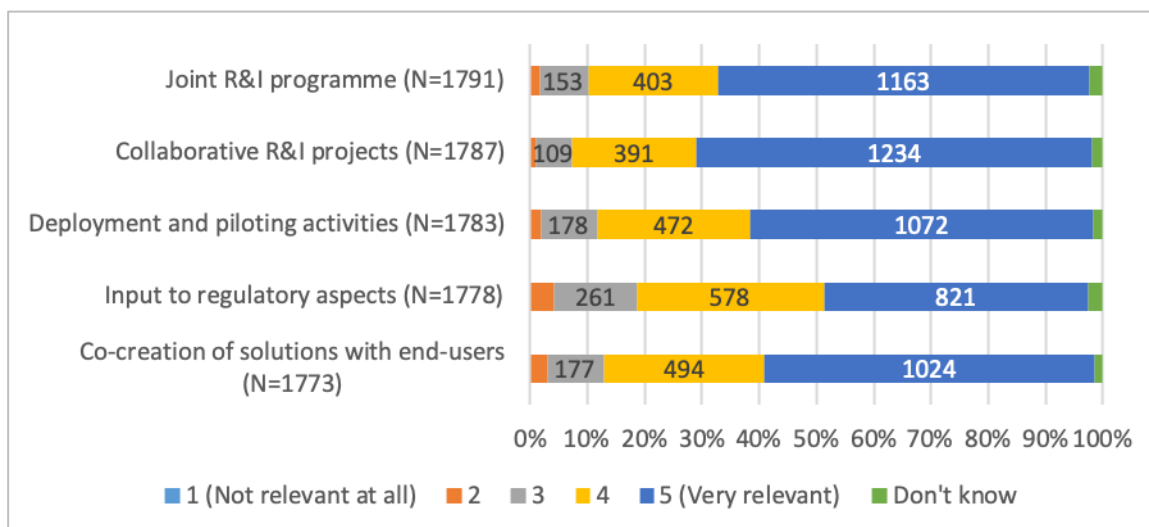


Implementation of activities

Most respondents indicated that implementing activities like a joint R&I programme, collaborative R&I projects, deployment and piloting activities, providing input to regulatory aspects and the co-creation of solutions with end-users are all (very) relevant for the partnerships to be able to meet its objectives (see Figure 20).

Minor differences were found between the main stakeholder categories, the differences found were in line with their profile. As such, academic/research institutions found joint R&I programme & collaborative R&I projects slightly more relevant and deployment and piloting activities, input to regulatory aspects and co-creation with end-users slightly less relevant than other respondents. For SMEs an opposite pattern is shown. Large companies, however, also found collaborative R&I projects slightly more relevant than other respondents, as well as input to regulatory aspects. The views of citizens are similar to non-citizens. Respondents that are/were directly involved in a current/preceding partnership, when compared to respondents not involved in a current/preceding partnership, show a slightly higher relevance across all activities shown in Figure 20.

Figure 20: In your view, how relevant are the following elements and activities to ensure that the proposed European Partnership would meet its objectives – Implementing the following activities (non-campaign replies) Aggregation of responses of all candidate initiatives



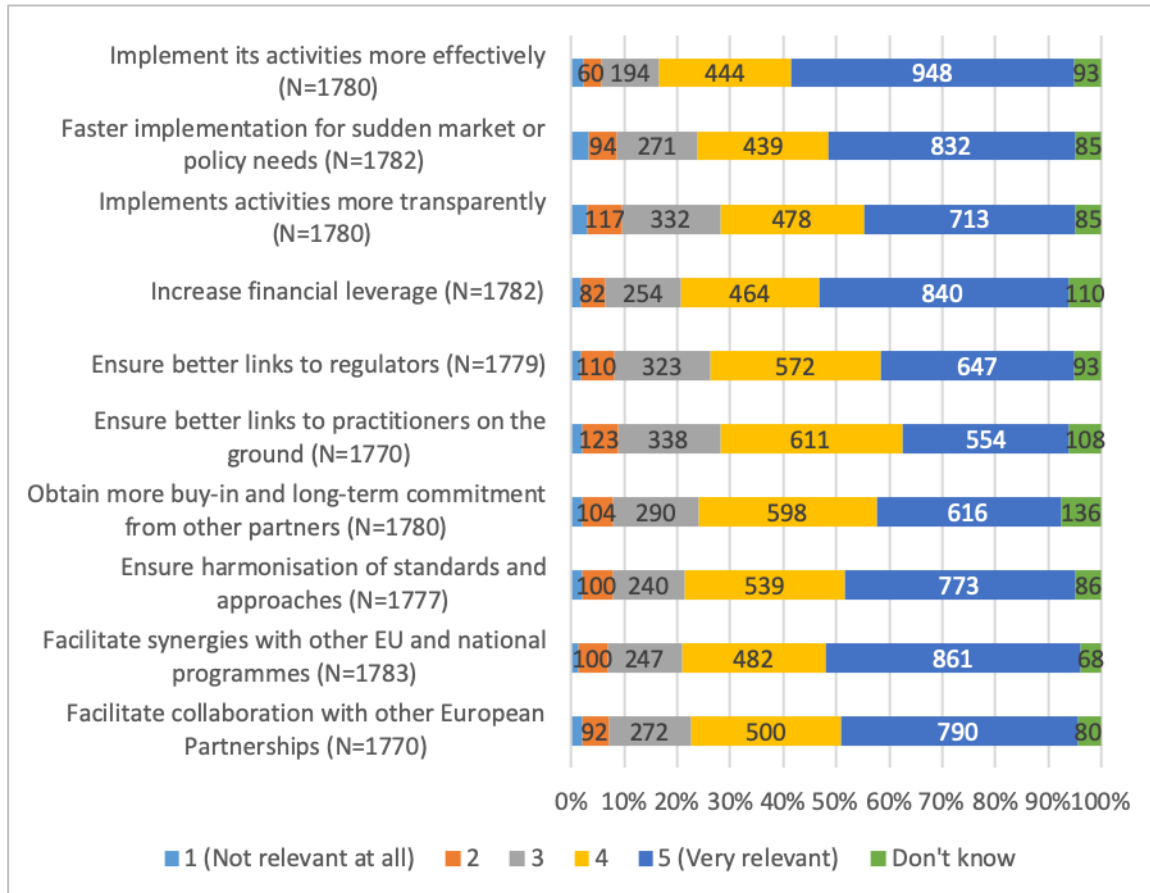
Relevance of setting up a legal structure (funding body) for the candidate European Partnerships to achieve improvements

Respondents were then asked to reflect on the relevance of setting up a legal structure (funding body) for achieving a set of improvements, as presented in Figure 21. In general, 70%-80% of respondents find a legal structure (very) relevant for these activities. The legal structure was found most relevant for implementing activities in a more effective way and least relevant for ensuring a better link to practitioners on the ground, however differences are small.

When comparing the main stakeholder categories we found minor differences. Academic/research institutions indicated a slightly lower relevance for transparency, better links to regulators as well as obtaining the buy-in and long-term commitment of other partners. SMEs also indicated a lower relevance regarding obtaining the buy-in and long-term commitment of other partners. Large companies showed a slightly higher relevance for implementing activities effectively, ensure better links to regulators, obtaining the buy-in and long-term commitment of other partners, synergies with other EU/MS programmes and collaboration with other EU partnerships than other open consultation respondents. NGOs find it slightly more relevant to implement activities faster for sudden market or policy needs. Public authorities, however, find it slightly less relevant to facilitate collaboration with other European Partnerships than other respondents.

The views of citizens show a slightly lower relevance for a legal structure in relation to implementing activities in an effective way. Quite different results are shown for respondents that are/were directly involved in a current/preceding partnership when compared to respondents not involved in a current/preceding partnership, they indicated a higher relevance across all elements presented in Figure 21.

Figure 21: In your view, how relevant is to set up a specific legal structure (funding body) for the candidate European Partnership to achieve the following? (non-campaign replies) Aggregation of responses of all candidate initiatives



Scope and coverage of the candidate European Partnerships based on their inception impact assessments

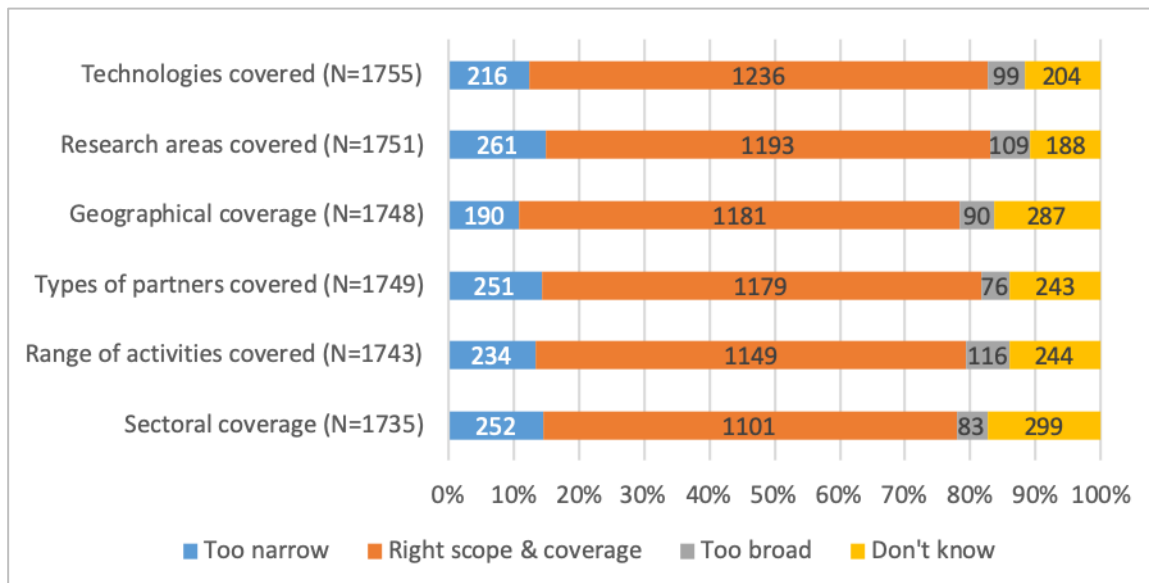
The response regarding the scope and coverage for the partnerships, based on inception impact assessments, shows that the large majority feels like the scope and coverage initially proposed in the inception impact assessments is correct. Figure 22 shows the results. However, about 11% to 15% of the respondents indicated the scope and coverage to be too narrow. About 11%-17% of respondents answered "Don't know". In the open answers respondents mostly reflected on specific aspects of the geographical and sectoral scope and coverage of the specific candidate European Partnerships, no overall lessons could be extracted.

Overall, differences between the main stakeholder categories were found to be minor. Academic/research institutions indicated slightly more often that the research area was "too narrow" than other respondents. SMEs on the other hand indicated slightly more often that the research area and the geographical coverage were "too broad". NGOs and public authorities, however, found the geographical coverage slightly more often "too narrow" when compared to other respondents. Large companies found the range of activities slightly more often "too broad" and the sectoral focus slightly more often "too narrow" when compared to other respondents.

The views of citizens are the same as for other respondents. Most notably, respondents that are/were directly involved in a current/preceding partnership, when compared to

respondents not involved in a current/preceding partnership, more often indicated that the candidate institutionalised European Partnership have the “right scope & coverage”.

Figure 22: What is your view on the scope and coverage proposed for this candidate institutionalised European Partnership, based on its inception impact assessment? (non-campaign replies) Aggregation of responses of all candidate initiatives



Scope for rationalisation and alignment of candidate European Partnerships with other initiatives

When asked whether it would be possible to rationalise a specific candidate European Institutionalised Partnership and its activities, and/or to better link with other comparable initiatives, nearly two thirds of respondents answered “Yes” (1000, or 62.15%), while over one third answered “No” (609, or 37.85%). Nearly no differences were found between the main stakeholder categories, only large companies and SMEs indicated slightly more often “Yes” in comparison to other respondents.

The views of citizens are the same as for other respondents. Respondents that are/were directly involved in a current/preceding partnership, indicated “No” more often, the balance is about 50/50 between “Yes” and “No” for this group.

In the open responses respondents often referred to specific similar/comparable and complementary initiatives discussing the link with a specific candidate European Partnership, no overall lessons could be extracted, but more detailed results can be found in the partnership specific result sections.

Relevance of European Partnerships to deliver targeted scientific, economic/technological and societal impacts

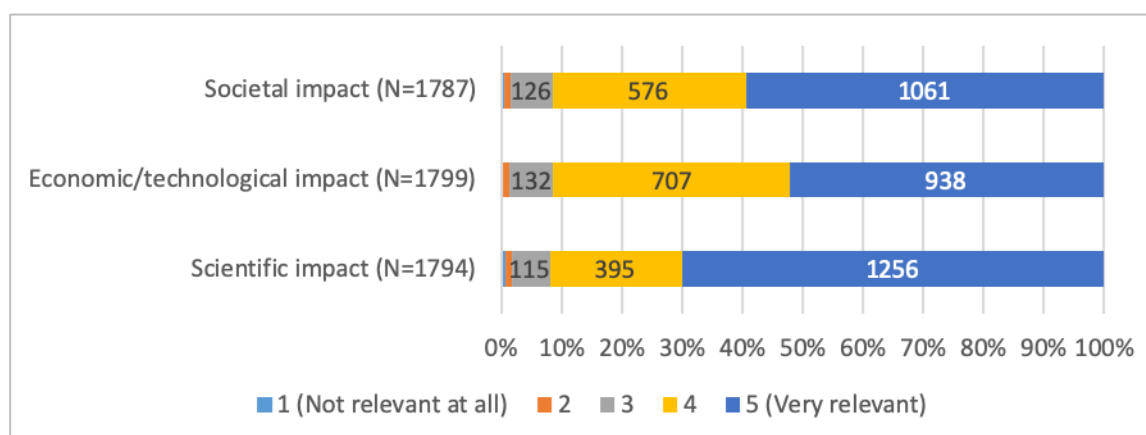
Finally, respondents were asked to rate the relevance of partnership specific impacts in three main areas: Societal impacts, Economic/technological impacts and Scientific impacts. To aggregate results the average of the responses on partnership specific impacts were calculated.

As presented in Figure 23, overall, all three areas were deemed (very) relevant across the candidate partnerships. Scientific impact was indicated as the most relevant impact, more than 90% of respondents indicated that these impacts were (very) relevant.

Only minor difference between stakeholder groups were found. Academic/research institutions found scientific impacts slightly more relevant, while large companies found economic and technological impacts slightly more relevant than other respondents. NGOs found societal impact slightly more relevant, while SMEs found this slightly less important.

Citizens, both EU and non-EU citizens, did not a significantly different view when compared to other respondents. Respondents that are/were directly involved in a current/preceding partnership find all impacts slightly more relevant than other respondents.

Figure 23: In your view, how relevant is it for the candidate European Institutionalised Partnership to deliver on the following impacts? (non-campaign replies) Aggregation of responses of all candidate initiatives



B.6 Responses to the open public consultation for the candidate partnership "Innovative SMEs"

B.6.1 Introduction

This section outlines the results of the Open Public Consultation for the candidate European Partnership on Innovative SMEs. The section outlines the following:

- Results on general questions, segregated for this candidate European Partnership:
 - Views on the needs of the future European Partnerships under Horizon Europe
 - Views on the advantages and disadvantages of participation in an Institutionalised European Partnership
- Results on specific questions for this candidate European Partnership:
 - Relevance of research and innovation efforts at the EU level to address problems
 - Views on Horizon Europe interventions to address these problems
 - Views on the relevance of elements and activities in: setting a joint long-term agenda; pooling and leveraging resources; partnership composition; implementation of activities.
 - Views on setting up a specific legal structure (funding body)
 - Views on the proposed scope and coverage of this candidate European Partnership
 - Views on the alignment of the European Partnership with other initiatives
 - Relevance of this candidate European Partnership to deliver impacts

B.6.2 Characteristics of respondents

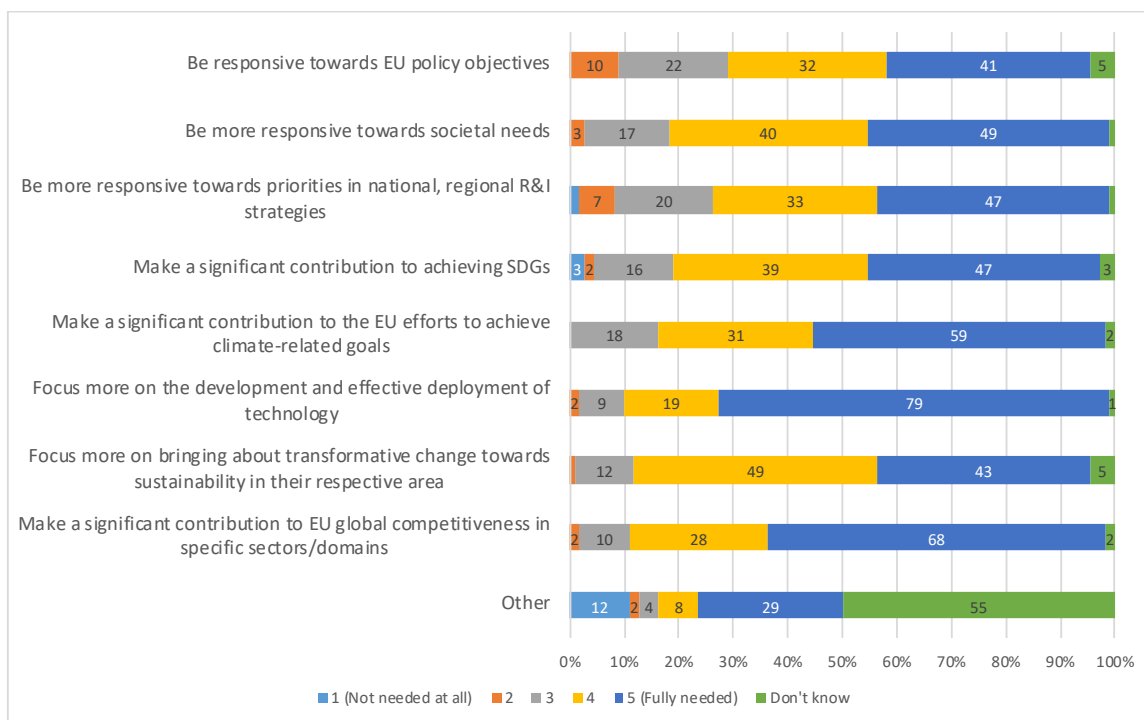
There are 110 respondents who answered (part of) the consultation for the candidate Innovative SMEs Partnership. Of these respondents, 16 (14.50%) were citizens. The largest group of respondents were businesses with 43 respondents (39.09%). There were 19 respondents from academic and research institutions and 12 from business associations. The other respondents came as representatives of public authorities (10, 9.09%), non-governmental organisations (4, 3.63%) and 'other' (6, 5.45%). The majority of respondents, namely 70 (63.64%), have been involved in the on-going research and innovation framework programme, of which 42 respondents (60.00%) were directly involved in a partnership under Horizon 2020 or its predecessor Framework Programme 7.

B.6.3 Characteristics of future candidate European Partnerships – as viewed by respondents to the Innovative SMEs initiative

At the beginning of the consultation, the respondents indicated their views of the needs of the future European Partnerships under Horizon Europe. Respondents that provided opinions about the Innovative SME partnership suggested that it should focus more on the development and effective deployment of technology and to make a significant contribution to EU global competitiveness in specific sectors/domains. 79 respondents (71.82%) and 68 respondents (61.82%) respectively indicated this is 'very relevant'. The categories of needs that were considered 'very relevant' by the lowest number of respondents are: to be responsive towards EU policy objectives (41 respondents), to focus more on bringing about transformative change towards sustainability in their respective area (43 respondents) and 'other' (29 respondents).

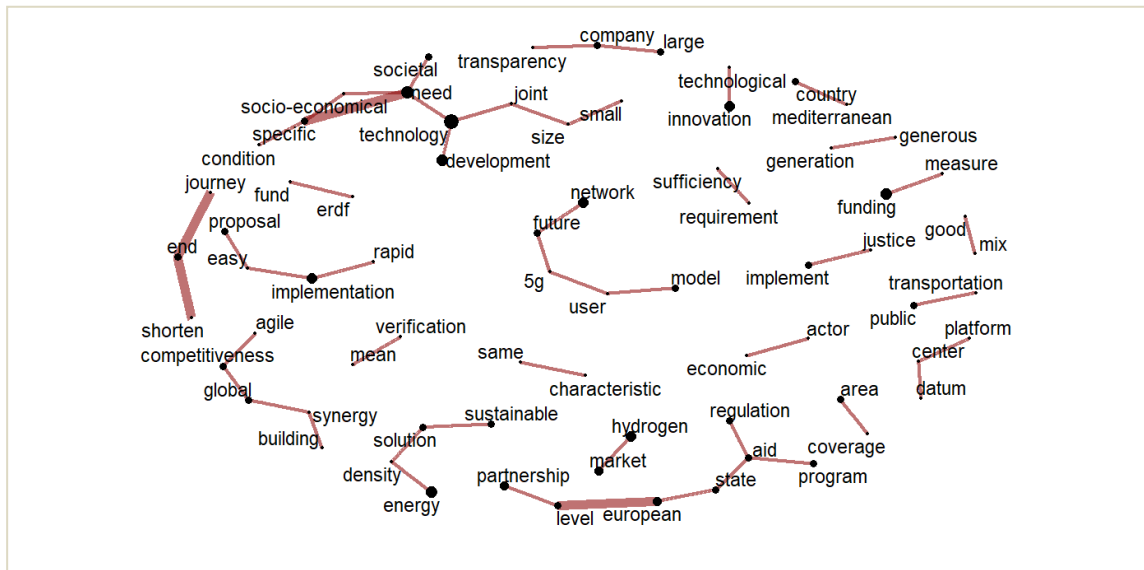
No statistical differences were found between the views of citizens and other respondents.

Figure 24: Views of the respondents in regard to the needs of future European Partnerships under Horizon Europe (N=110)



The respondents also had the option to indicate other needs. The results of the analysis resulted in the chart shown in Figure 25 showing the co-occurrences of keywords. The results show that respondents have indicated needs around socio-economical and societal needs with regard to technology. The responses by academic stakeholders (8), business associations (2), companies (20), citizens (7) and other types related mainly to partnerships as such. The few comments relating directly to Eurostars 2 mentioned the need for more flexibility – mainly in combining different funding sources -, less administration and a faster uptake of innovative projects.

Figure 25: Assessment of open answers of other needs, 50 most common co-occurring keywords (N=45)



B.6.4 Main advantages and disadvantages of Institutionalised European Partnerships

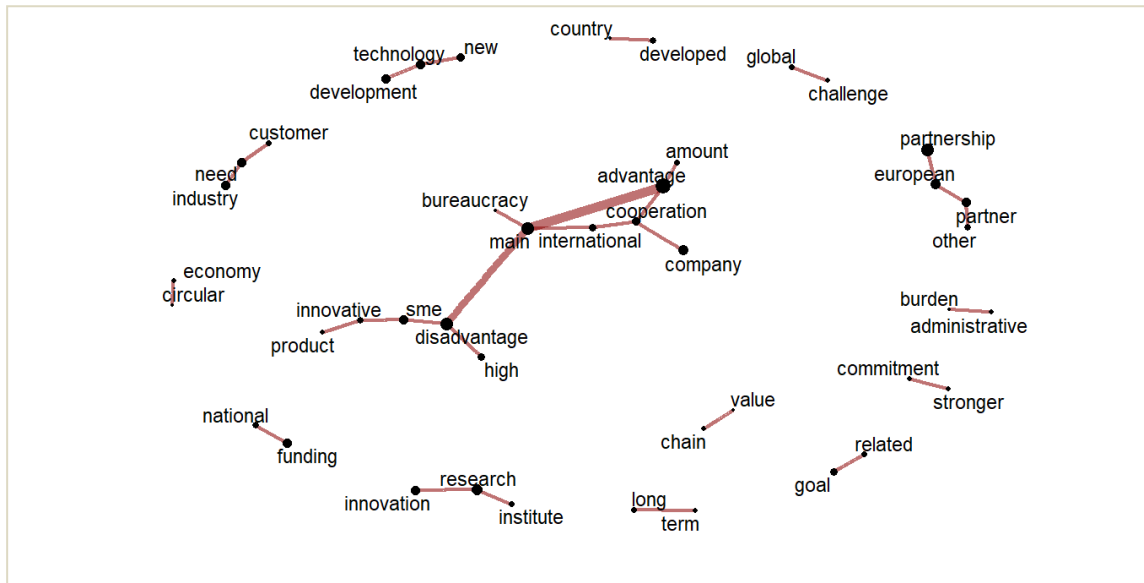
The respondents were asked what they perceived to be the main advantages and disadvantages of participation in an Institutionalised European Partnership (as a partner) under Horizon Europe. The keyword analysis used for open questions resulted in the graph shown in Figure 26. This analysis showed the respondents viewed international cooperation as the main advantage.

The majority of the commenting 15 academic stakeholders addressed partnerships in general. They pointed out to divers advantages and disadvantages. Mentioned advantages included the extended collaboration between academic, research and private entities, the widening of networks, being involved in challenge-driven projects and having an impact with the funded projects. Disadvantages were seen in the industry-driven agenda ('direct dependence on goals of industrial partners'), challenging partner reconciliation processes, bureaucracy, and lobbyism.

Commenting business associations (8) point out to commitments, synergies, competitiveness, and cooperation. However, as a potential disadvantage, the risk of focusing too much on strategies and long-term action plans and not enough on practical deployment aspects was equally mentioned.

Among the almost 40 comments from companies, only a few of the them related to Eurostars 2/Innovative SMEs. They mainly indicated the advantage of international collaboration. A critical voice among the responding companies pointed out that national integration means a lot of bureaucracy and takes too much time which results in slow uptake or obsolete results.

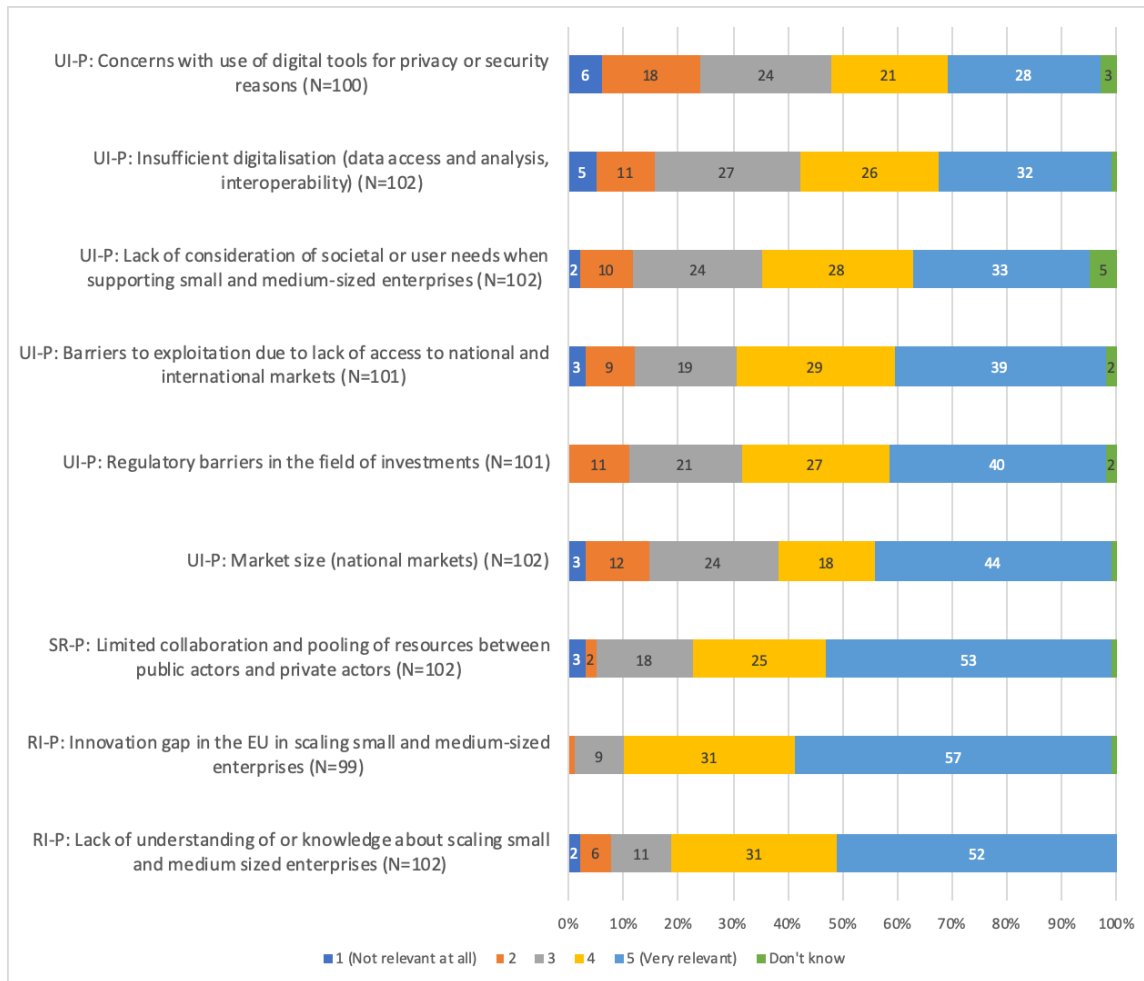
Figure 26: Assessment of open answers with advantages and disadvantages of participation in an Institutionalised European Partnership, 30 most common co-occurring keywords (N=89)



B.6.5 Relevance of EU level efforts to address problems in relation to the Innovative SMEs field

In the consultation, respondents were asked to provide their view on the relevancy of research and innovation efforts at EU level to address problems in relation to innovative small and medium-sized enterprise. Respondents reflected specifically on three types of problems: problems in uptake of innovative solutions (UI-P), structural and resource problems (SR-P) and research and innovations problems (RI-P). In Figure 27, the responses to these answers are presented.

Figure 27: Views of respondents on relevance of research and innovation efforts at the EU level to address problems in relation to innovative small and medium-sized enterprises



With regard to the uptake in innovation problems, the responses are very similar, with ‘very relevant’ being the answer most often given. With regard to the market size of national markets, most respondents have indicated that this is an issue that is very relevant for the research and innovation efforts at the EU level to address (44, 43.1%).

There was only one structural and resource problem that the respondents were asked to reflect on. A total of 53 respondents indicated that limited collaboration and pooling of resources between public actors and private actors was a very relevant issue for research and innovation efforts at EU level to address (52%).

The problem that has received the most responses indicating that it is ‘very relevant’ is a research and innovation problem, namely the innovation gap in the EU in scaling small and medium-sized enterprises (57, 57.6%). This view has been shared widely among all stakeholders.

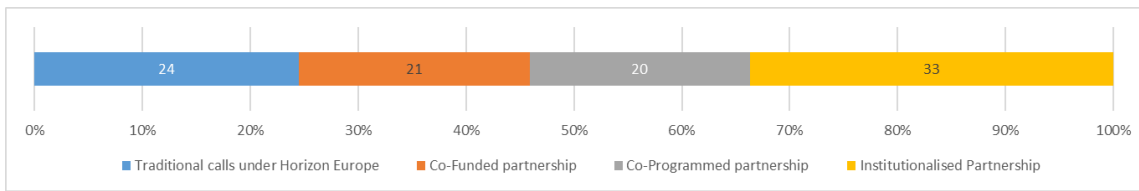
No statistical differences were found between the views of citizens and other respondents. Respondents that are/were involved in a current/preceding partnership (Horizon 2020 or Framework Programme 7) found the uptake in innovation problem regarding barriers to exploitation due to lack of access to national and international markets more relevant.

B.6.6 Horizon Europe mode of intervention to address problems

After providing their views on the relevance of problems, respondents were asked to indicate how these challenges could be addressed through Horizon Europe intervention. As shown in Figure 28, just over 30% of respondents indicated that institutionalised partnerships were the best fitting intervention.

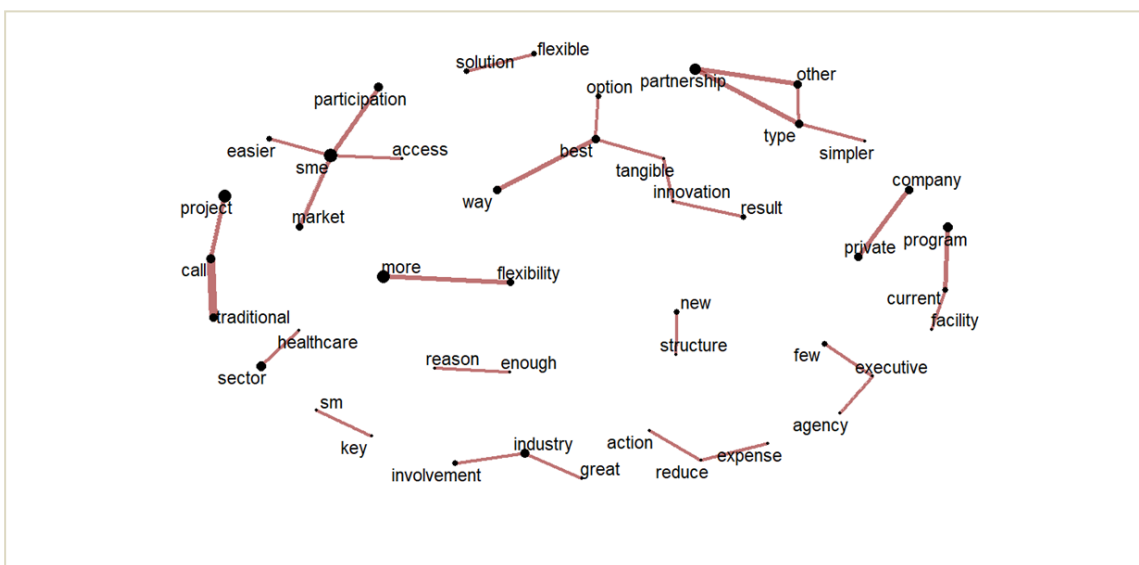
No statistical differences were found between the views of citizens and other respondents.

Figure 28: Assessment of Horizon Europe intervention



The respondents were asked to briefly explain their answers to the question above. People who stated that an institutionalised partnerships was not the best fitting answer, mentioned that other partnership types are simpler, traditional calls and more flexibility in their answers (Figure 29). Respondents who did select institutionalised partnership as their preferred intervention (N=30) mentioned previous partnerships, international collaboration and good experiences with European programmes (not pictured).

Figure 29: Assessment of open answers to explain their choice for a different intervention than institutionalised partnership in the assessment of the Horizon Europe intervention, 30 most common co-occurring keywords (N=60)



B.6.7 Relevance of a set of elements and activities to ensure that the proposed European Partnership would meet its objectives

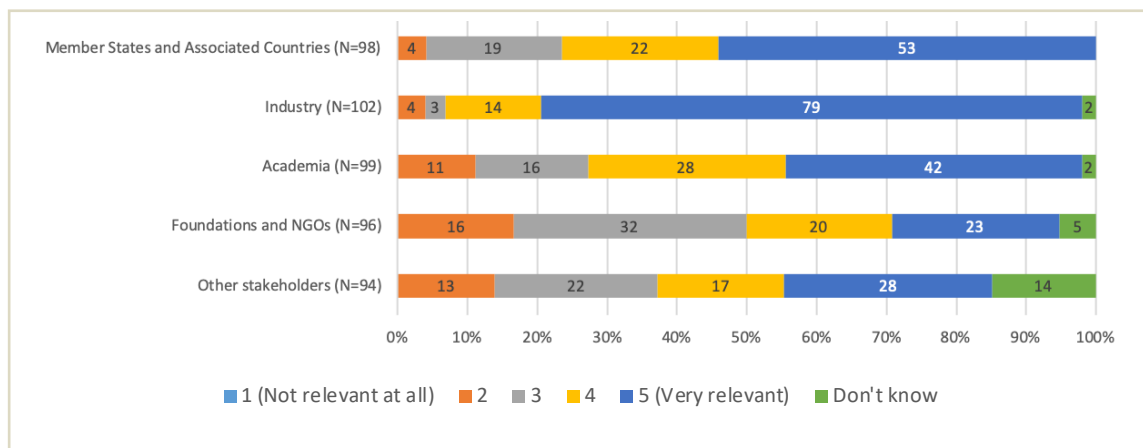
Setting joint long-term agendas

Respondents were asked how relevant the involvement of actors is in setting a joint long-term agenda to ensure that the proposed European Partnership would meet its objectives (see Figure 30). No statistical differences were found between the views of citizens and other respondents.

The highest number of respondents indicated that the involvement of Industry is very relevant (79 respondents or 77%). A slightly lesser share of the respondents indicated that the involvement of Member States and Associated Countries (53 respondents or 54%) and Academia (42 respondents or 42%) is very relevant. Between the larger stakeholder groups academics, business associations, companies, public authorities – the views about the relevance of actors were widely shared.

No statistical differences were found between the views of citizens and other respondents.

Figure 30: Views of respondents on relevance of actors in setting joint long-term agenda

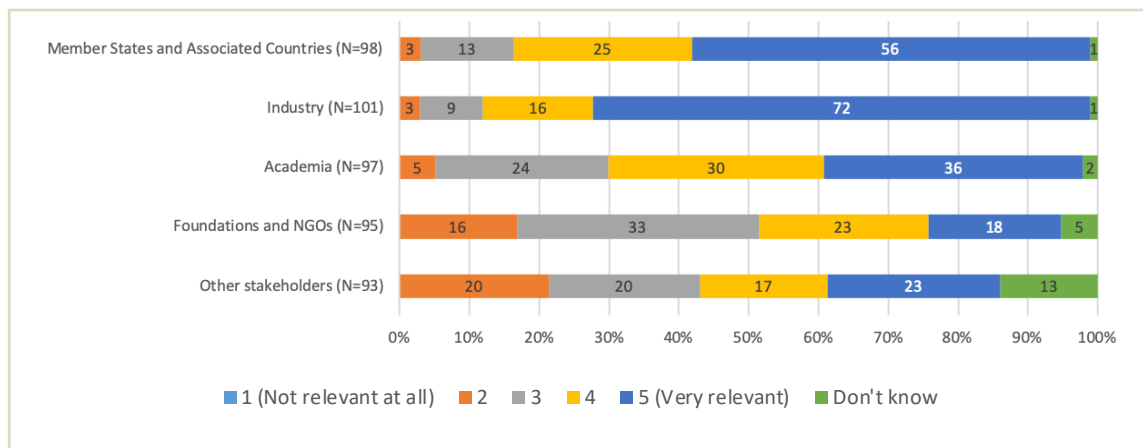


Relevance of elements and activities in pooling and leveraging resources

With respect to the relevance of actors in pooling and leveraging resources, such as financial, infrastructure, in-kind expertise etc., to meet Partnership objectives, the patterns are very similar. A total of 72 respondents (71.28%) indicated that industry was very relevant, and 56 (57.14%) respondents felt that Member States and Associated Countries were very relevant. With regard to Academia 36 respondents (37.11%) felt that they were very relevant. No respondents indicated that any of the categories was Not relevant at all (see Figure 31).

Slight statistical differences were found between the views of citizens and other respondents, citizens found foundations and NGOs as well as other stakeholders less relevant. Respondents that are/were involved in a current/preceding partnership found governments (Member States and Associated Countries) more relevant than other respondents.

Figure 31: Views of respondents on relevance of actors for pooling and leveraging resources



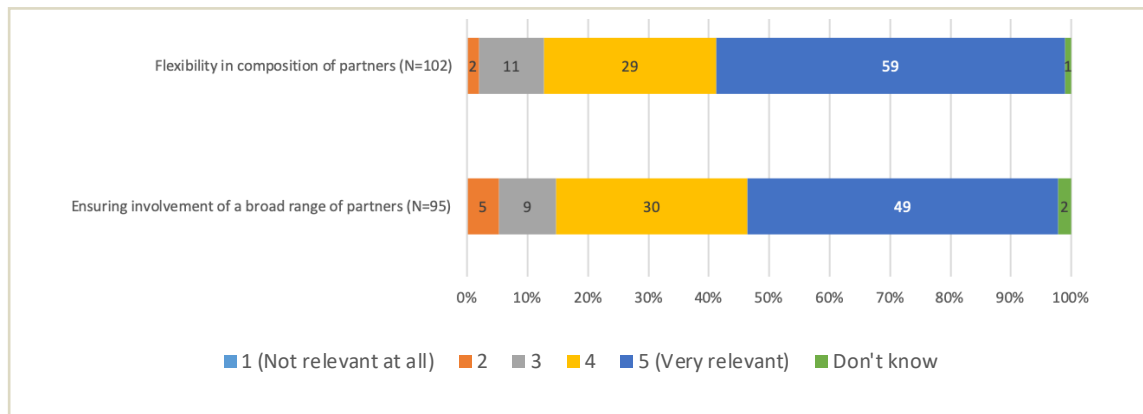
Relevance of elements and activities for the partnership composition

Respondents were asked about the relevance of flexibility in the composition of partners over time and involvement of a broad range of partners (including across disciplines and sectors) for the partnership composition to reach partnership objectives. As is visible in Figure 32, the pattern of responses is very similar for both composition elements – over 50% respondents consider that these elements are very relevant to reach Partnership objectives. With flexibility scoring slightly higher than the involvement of a broad range of actors. Overall over 80% of the respondents have given both criteria either a score of 4 or 5 (very relevant). The only slightly outstanding view relates to ‘Broad range of partners’ –

here, in particular the academic stakeholders (70%) find this very relevant whereas only 25% of the SMEs and 35% of the larger firms find this very relevant.

No statistical differences were found between the views of citizens and other respondents.

Figure 32: Views of respondents on relevance of partnership composition elements

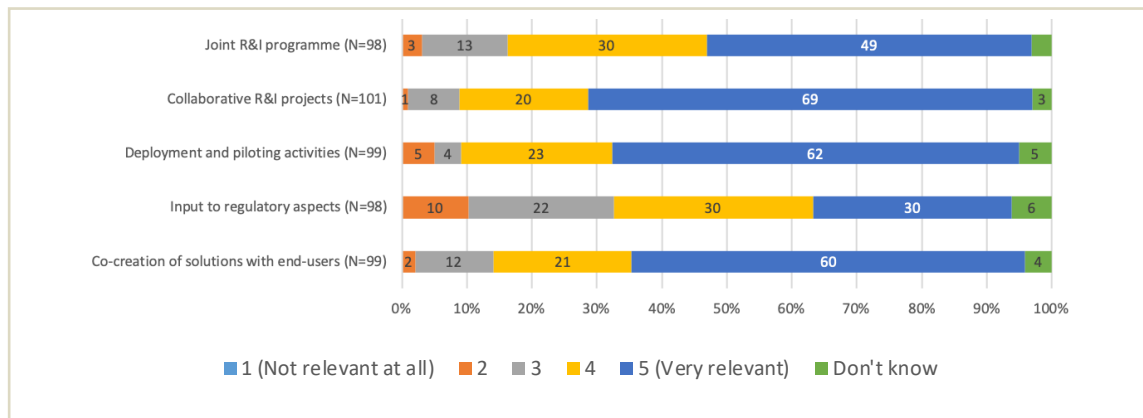


Relevance of implementation of activities

Respondents were asked to provide opinions on relevance of implementation of several activities for meeting objectives of the Innovative SME’s Partnership. Among activities were listed – a joint R&D programme, collaborative R&D projects, deployment and piloting activities, input to regulatory aspects and co-creation of solutions with end-users. For three of the activities 60 or more respondents indicated that they were very relevant, namely: Co-creation of solutions with end-users (60, 60%), Deployment and piloting activities (62, 62.6%) and Collaborative R&I projects (69, 68.3%). In contrast input to regulatory aspects is considered less relevant by respondents. See Figure 33.

No statistical differences were found between the views of citizens and other respondents.

Figure 33: Views of respondents on relevance of implementation of the following activities



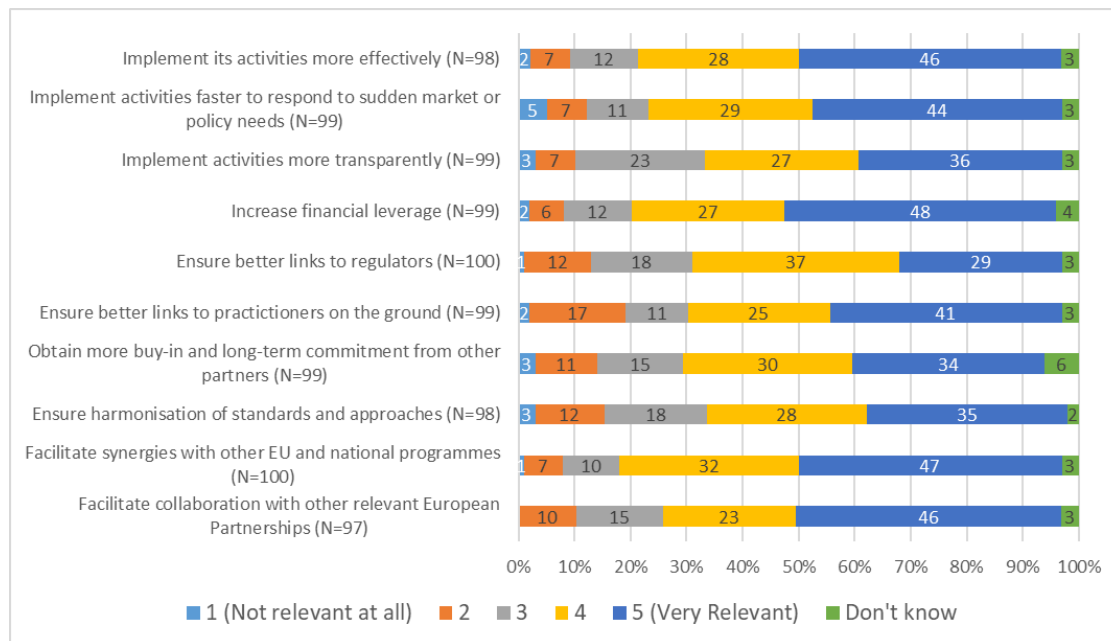
B.6.8 Relevance of setting up a legal structure (funding body) for the candidate European Partnerships to achieve improvements

Respondents were also asked to assess the relevance of a specific legal structure (funding body) for the candidate European Partnership to achieve several activities. According to Figure 34, respondents answered similarly to the possible answer categories. For companies, the ‘increase of financial leverage’ was the most important aspect - two-thirds of them indicated this as highly relevant. ‘Facilitating of synergies with other EU and national programmes’ which was overall coming out second in terms of high relevance is perceived as such by all relevant stakeholders. These options were most often seen as

relevant or very relevant. The number of respondents that have indicated that they view a measure as 'not relevant at all' is very small across all the measures.

No statistical differences were found between the views of citizens and other respondents.

Figure 34: Views of respondents on relevance of a specific legal structure

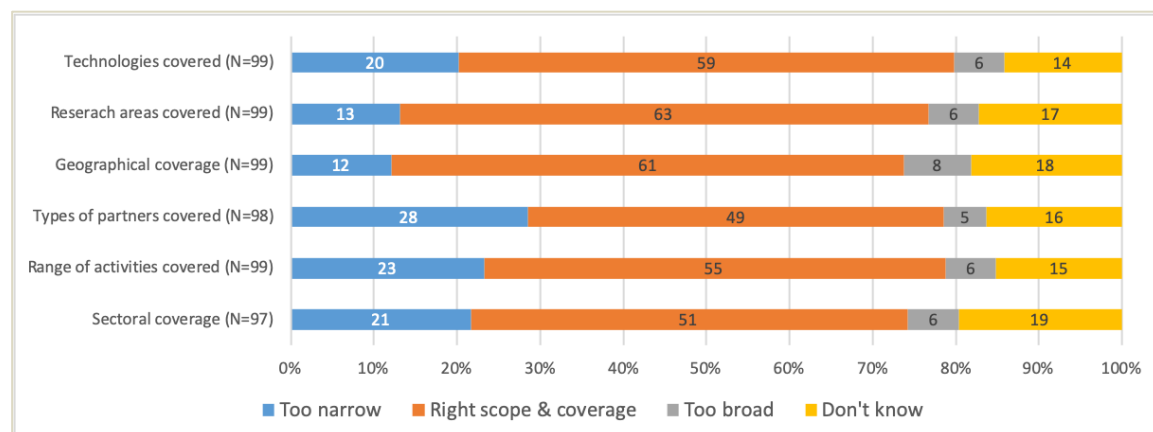


B.6.9 Scope and coverage of the candidate European Partnerships based on their inception impact assessments

Respondents were asked to assess the scope and coverage of the Innovative SME's Partnership, based on its inception impact assessment. Over half of the respondents have indicated that the partnership has the right scope and coverage across all areas, although Research areas (63, 63.6%) and Geographical coverage (61, 61.6%) have the highest number of 'right scope and coverage' answers. A total of 28 respondents indicated that the scope of the type of partners covered was too narrow (28, 28.6%).

No statistical differences were found between the views of citizens and other respondents.

Figure 35: Views of respondents on the scope and coverage proposed for the Innovative SME's Partnership

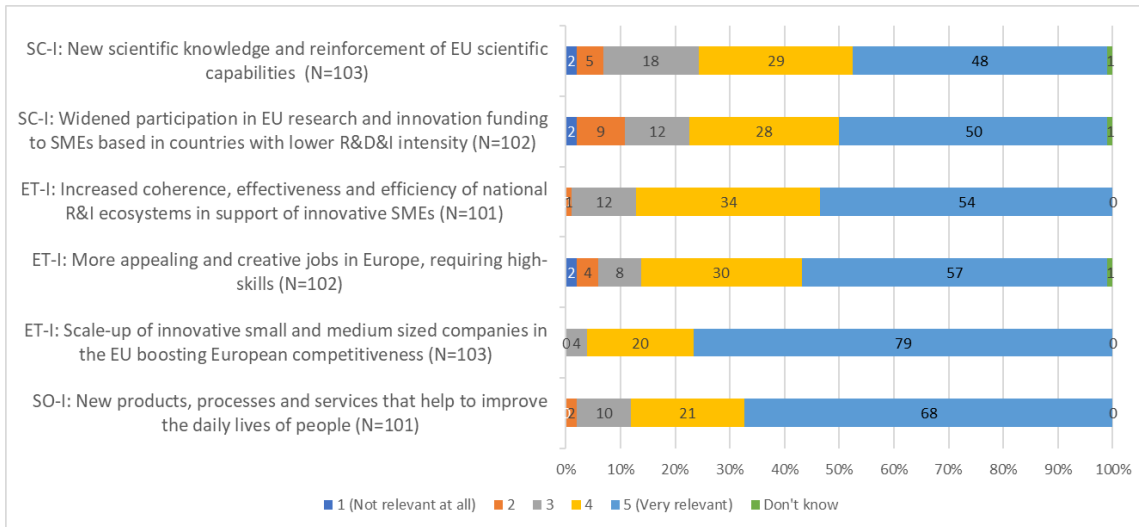


Aside from this multiple choice question, the respondents were also asked to provide any comment that they may have on the proposed scope and coverage for this candidate Institutionalised Partnership. The keywords used in the open questions resulted in the graph shown in Figure 36. Nevertheless, several comments relate to the inclusion of SMEs in other candidate partnerships. Relevant comments pointed out to the definition of eligible

innovation funding to SMEs based in countries with lower R&D&I intensity’, and to ‘generate new scientific knowledge and reinforce EU scientific capabilities’. The latter impact was however seen as very relevant by two-thirds of the academic stakeholders.

No statistical differences were found between the views of citizens and other respondents.

Figure 39: Views of respondents on the relevance of the candidate European Institutionalised Partnership to various impacts



Appendix C Methodological Annex

The Impact Assessment studies for all 13 candidate institutionalised European Partnerships mobilised a mix of qualitative and quantitative data collection and analysis methods. These methods range from desk research and interviews to the analysis of the responses to the Open Consultation, stakeholder analysis and composition/portfolio analysis, bibliometrics/patent analysis and social network analysis, and a cost-effectiveness analysis.

The first step in the impact assessment studies consisted in the definition of the context and the problems that the candidate partnerships are expected to solve in the medium term or long run. The main data source in this respect was desk research. The Impact Assessment Study Teams went through grey and academic literature to identify the main challenges in the scientific and technologic fields and in the economic sectors relevant for their candidate partnerships. The review of official documentations, especially from the European Commission, additionally helped understand the main EU policy proprieties that the initiatives under assessment could contribute to achieve.

Almost no candidate institutionalised European Partnership is intended to emerge ex nihilo. Partnerships already existed under Horizon 2020 and will precede those proposed by the European Commission. In the assessment of the problems to address, the Impact Assessment Study Teams therefore considered the achievements of these ongoing partnerships, their challenges and the lessons that should be drawn for the future ones. For that purpose, they reviewed carefully the documents in relation to the preceding partnerships, especially their (midterm) evaluations conducted. The bibliography in Appendix A gives a comprehensive overview of the documents and literature reviewed for the present impact assessment study.

Finally, the description of the context of the candidate institutionalised European Partnerships required a good understanding of the corresponding research and innovation systems and their outputs already measured. The European Commission services and, where needed the ongoing Joint Undertakings or implementation bodies of the partnerships under Article 185 of the TFEU, provided data on the projects that they funded and their participants. These data served as basis for descriptive statistic of the numbers of projects and their respective levels of funding, the type of organisations participating (e.g. universities, RTOs, large enterprises, SMEs, public administrations, NGOs, etc.) and how the funding was distributed across them. Special attention was given to the countries (and groups of countries, such as EU, Associated Countries, EU13 or EU15) and to the industrial sectors, where relevant. The sectoral analysis required enriching the eCORDA data received from the European Commission services with sector information extracted from ORBIS. We used the NACE codification up to level 2. These data enabled identified the main and, where possible, emerging actors in the relevant systems, i.e. the organisations, countries and sectors that will need to be involved (further) in the future partnerships.

The horizontal teams also conducted a Social Network Analysis using the same data. It consisted in mapping the collaboration between the participants in the projects funded under the ongoing European partnerships. This analysis revealed which actors – broken down per type of stakeholders or per industrial sector – collaborate the most often together, and those that are therefore the most central to the relevant research and innovation systems.

The data provided by the European Commission finally served a bibliometric analysis aimed at measuring the outputs (patents and scientific publications) of the currently EU-funded research and innovation projects. A complementary analysis of the Scopus data enabled to determine the position and excellence of the European Union on the international scene, and identify who its main competitors are, and whether the European research and innovation is leading, following or lagging behind.

All together, these statistical analyses will complement the desk research for a comprehensive definition of the context in which the candidate institutionalised European Partnerships are intended to be implemented. The conclusions drawn on their basis will be confronted to the views of experts and stakeholders collected via three means:

- The comments to the inception impact assessments of the individual candidate institutionalised European partnerships received in August 2019
- The open public consultation organised by the European Commission from September to November 2019
- The interviews (up to 50) conducted by each impact assessment study team conducted between August 2019 and January 2020.

For instance, in all three exercises, the respondents were asked to reflect on the main challenges that the candidate institutionalised European Partnerships should address. In the open public consultations, they mainly reacted to proposals from the European Commission like when they were given to opportunity to give feedback to the inception impact assessment.

The views of stakeholders (and experts) were particularly important for determining the basic functionalities that the future partnerships need to demonstrate to achieve their objectives as well as their most anticipated scientific, economic and technological, and societal impacts. The interviews allowed more flexibility to ask the respondents to reflect about the different types of European Partnerships. Furthermore, as a method for targeted consultation, it was used to get insights from the actors that both the Study Teams and the European Commission were deemed the most relevant. For the comparative assessment of impacts, the Study Teams confronted the outcomes of the different stakeholder consultation exercises to each other with a view of increasing the validity of their conclusions, in line with the principles of triangulation. Appendix B includes also the main outcomes of these three stakeholder consultation exercises.

The comparison of different options for European partnerships additionally relied on a cost-effectiveness analysis. When it comes to research and innovation programmes, the identification of costs and benefits should primarily be aimed at identifying the “value for money” of devoting resources from the EU (and Member States) budget to specific initiatives. Based on desk research and consultation with the European Commission services, the horizontal study team produced financial estimates for different types of costs (preparation and setup costs, running costs and winding down costs) and per partnership option. The costs were common to all candidate European Partnerships. The results of the cost model were displayed in a table, where each cost was translated on a scale using “+” in order to ease the comparison between the partnership options.

A scorecard analysis, which allocated each option a score between 1 and 3 against selected variables, was used to highlight those options that stand out as not being dominated by any of the other options in the group: such options are then retained as the preferential ones in the remainder of our analysis. It also allowed for easy visualisation of the pros and cons of alternative options.

Appendix D Additional information on the policy context

Table 22: Shares (%) of patent applications (WIPO-PCT) by technology fields, 2005 and 2014

2005	Biotech-nology	ICT	Nanotech-nology	Medical technology	Pharma-ceuticals	Selected environment-related technologies	Other technolo-gical fields
EU28	5,7	30,1	1,0	6,7	8,2	7,0	41,3
USA	9,2	40,8	1,9	12,2	11,5	5,7	18,9
CHN	3,2	58,2	0,6	3,7	6,6	5,7	22,0
JPN	5,6	45,6	1,6	5,1	5,8	9,1	27,2
KOR	3,9	45,8	1,8	3,1	4,6	6,4	34,4
2014	Biotech-nology	ICT	Nanotech-nology	Medical technology	Pharma-ceuticals	Selected environment-related technologies	Other technolo-gical fields
EU28	5,3	28,3	0,3	7,5	4,9	7,1	46,6
USA	8,4	41,7	0,4	11,1	8,7	4,4	25,3
CHN	2,3	61,2	0,1	3,1	3,3	3,5	26,4
JPN	2,9	39,8	0,2	7,0	2,3	6,7	40,9
KOR	4,3	45,7	0,4	6,8	4,2	5,2	33,5

Source: Science, Research and Innovation Performance of the EU (SRIP) report (2018)

Table 23: SME Instrument (H2020) funding

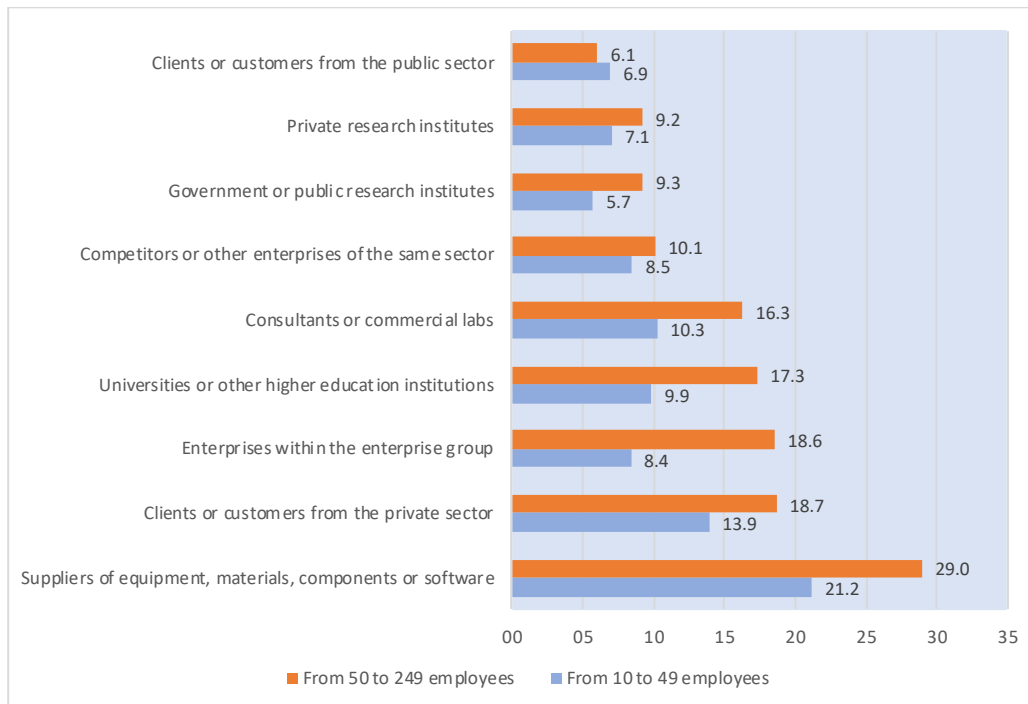
Year	Nr of projects funded under SME phase 1	EU Contribution	Nr of projects funded under SME phase 2	EU Contribution
2014	163	8.150.000		
2015	792	39.600.000	211	358.872.194
2016	673	33.650.000	202	317.218.537
2017	641	32.050.000	240	385.751.100
2018	877	43.850.000	251	431.014.417
2019	564	28.200.000	134	253.930.934
Total	3710	185.500.000	1038	1.746.787.182

Source: Corda database; Calculation: Technopolis Group

Appendix E Additional information related to the problem definition

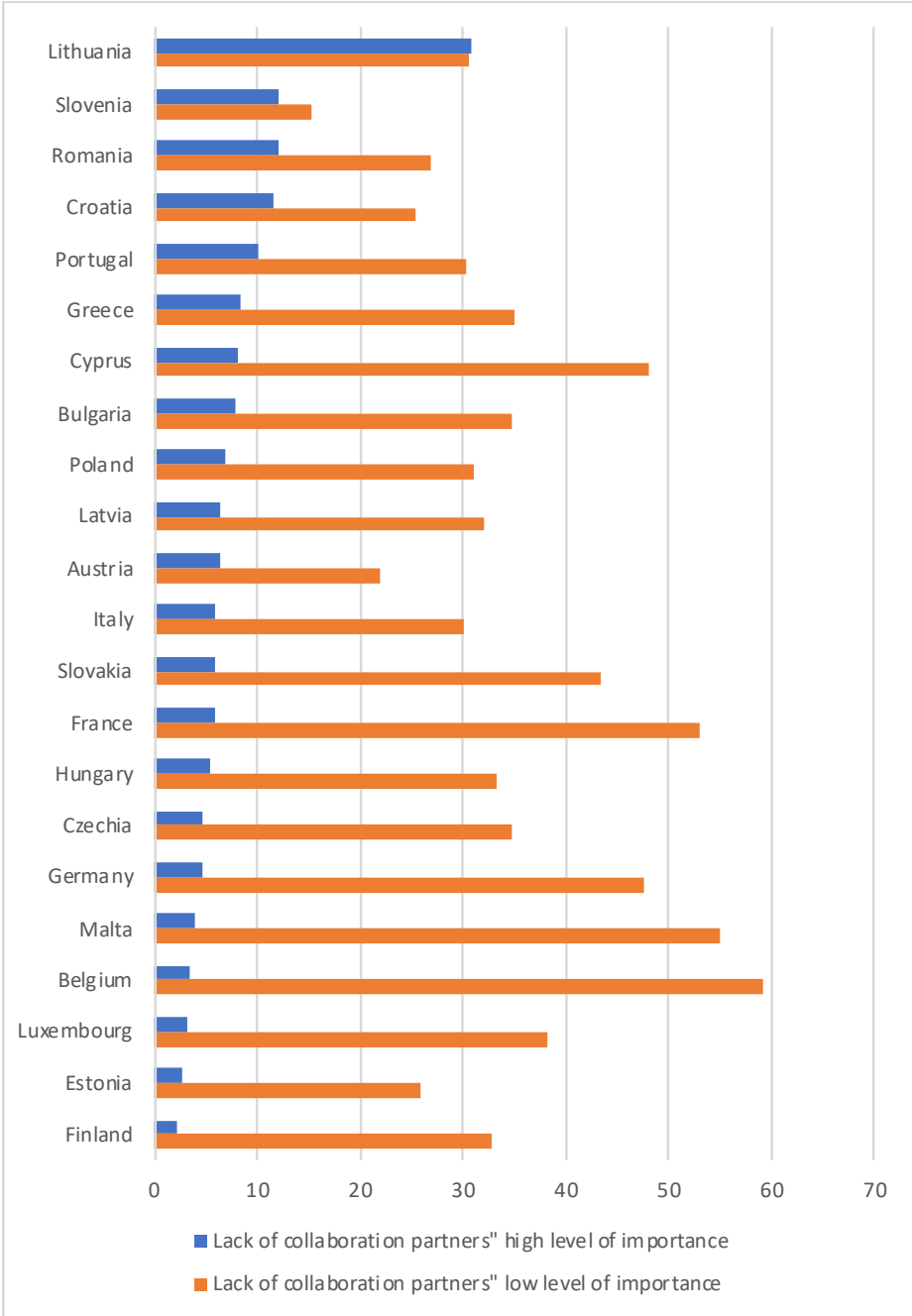
E.1 Key information from the Community Innovation Survey (CIS)

Figure 40: Share of product and/or process innovative enterprises in the manufacturing sector engaged in co-operation by co-operation partner



Source: Eurostat, Product and/or process innovative enterprises engaged in co-operation by co-operation partner, NACE Rev. 2 activity and size class [inn_cis10_coop]. Calculation: Technopolis Group

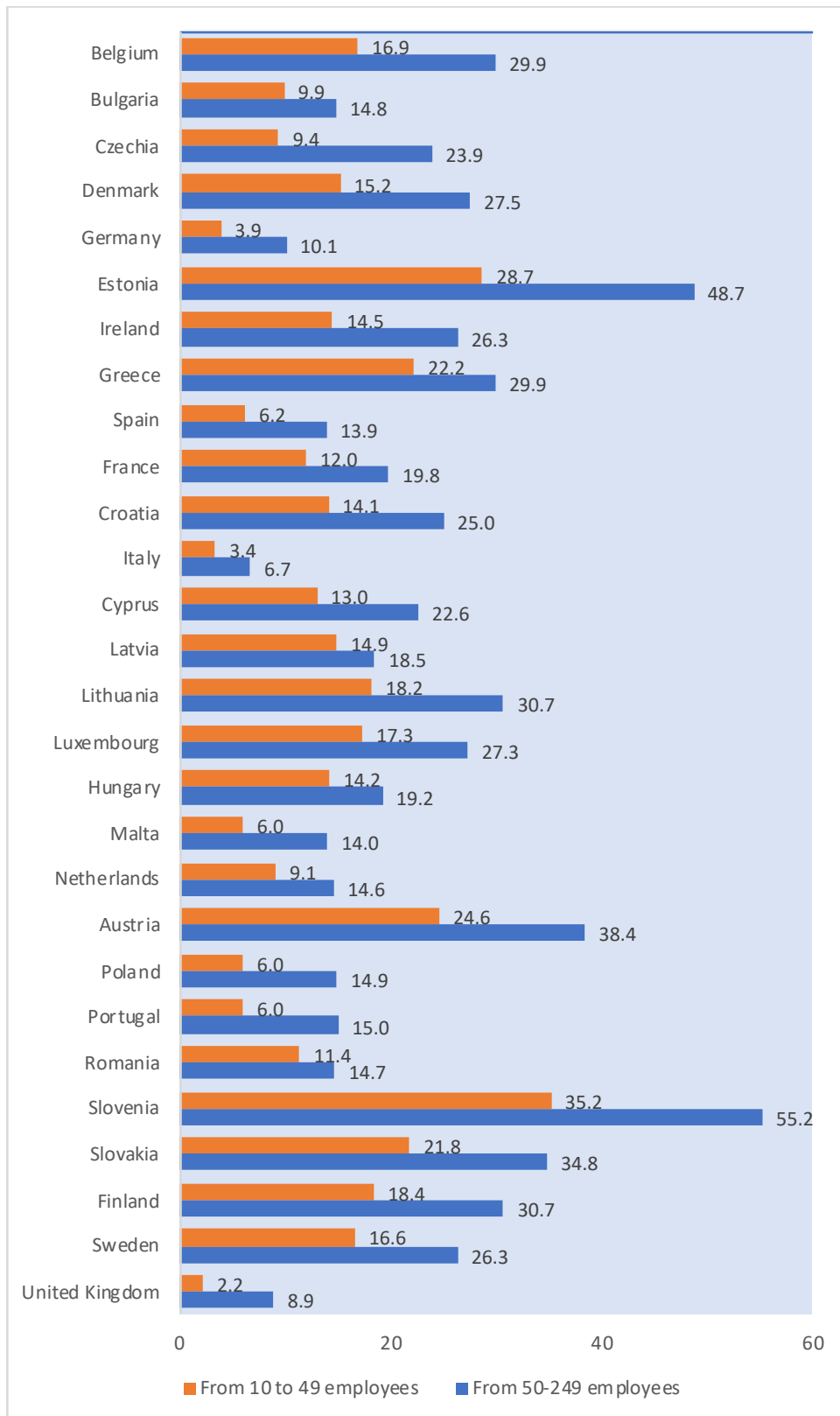
Figure 41: Share of innovative enterprises indicating "Lack of collaboration partners" as a high/low importance as a hampering factor for innovation activities



Source: Eurostat, Innovative enterprises by hampering factor for innovative activities, level of importance of the hampering factor, NACE Rev. 2 activity and size class [inn_cis10_ham].

Note: Spain, United Kingdom: no data available

Figure 42: Share of innovative enterprises engaged in national and international co-operation



Source: Eurostat, Product and/or process innovative enterprises engaged in co-operation by co-operation partner, NACE Rev. 2 activity and size class [inn_cis10_coop]

Note: Malta and United Kingdom: no data on national partners

Table 24: Share of innovative SMEs that received public funding for innovation activities by source of funding

	Public funding	National central government	Local or regional authorities	European Union	EU 7th Framework and Horizon EU2020 Programmes
Belgium	27,3	17,1	18,5	3,4	2,7
Bulgaria	35,2	24,0	0,9	32,2	1,5
Czechia	35,4	19,2	4,1	22,9	1,3
Germany	20,7	14,5	5,2	5,2	2,7
Estonia	18,7	14,2	1,9	7,3	1,9
Greece	24,7	16,4	7,6	5,2	2,3
Spain	30,7	19,8	15,4	8,4	4,4
France	46,9	43,3	11,8	6,1	2,2
Croatia	24,3	14,9	7,5	7,8	1,0
Italy	34,1	19,8	17,9	4,1	1,6
Cyprus	25,2	18,9	1,3	8,5	2,6
Latvia	25,6	4,3	1,4	23,6	2,9
Lithuania	14,3	6,3	2,4	8,4	0,8
Luxembourg	20,9	19,6	0	3,7	2,5
Hungary	26,7	14,1	1,7	18,1	2,4
Malta	20,9	16,8	16,8	6,1	1,6
Netherlands	39,5	37,3	6,3	4,6	2,4
Poland	21,6	7,8	5,7	14,8	0,9
Portugal	26,9	18,0	5,6	11,1	5,8
Romania	38,4	17,8	4,4	24,0	3,9
Slovenia	26,0	20,4	2,8	12,6	5,5
Slovakia	17,5	6,1	0,5	13,9	3,7
Finland	33,2	27,6	8,5	5,9	2,5
Sweden	16,0	11,2	:	6,0	:

Source: Eurostat, Product and/or process innovative enterprises that received public funding for innovation activities by source of founding, NACE Rev. 2 activity and size class [inn_cis10_pub]

E.2 Eurostars 2 – key developments and indicators

When Eurostars 1 was planned and implemented, there was a perceived lack of coordination between national funding bodies, innovation agencies, and policy makers who tended to focus on supporting RDI among firms on a regional or national level with

disregard for the benefits of international RDI collaboration.⁶⁸ In this respect, Eurostars filled a niche in the R&I policy mix.

While the final evaluation of Eurostars 1 mentioned the relevance of the programme in reaching its target group of R&D performing SMEs effectively, it also noted several shortcomings concerning structural features. In particular, the information flows between the Eureka Association (ESE) and national bodies was critically mentioned; the length of the evaluation process and the fact that despite an efficient central evaluation process, the process is not harmonised among countries, were criticised too. Similarly, the issue of double reporting/evaluation was pointed out. Furthermore, the lack of synchronisation between countries in terms of funding rules and time-to-funding, was pointed out as hampering efficiency.⁶⁹

Since the main problem – the lack of coherent approaches – was not fully addressed with Eurostars 1, it remains the objective of Eurostars 2. Eurostars 2 still needs to further integration of national programmes and improvements in the operational performance in order to reach shorter time-to-contract, as well as transparent and a more efficient administration.⁷⁰ This was addressed in the interim evaluation of Eurostars 2, which concluded that the programme meets its content-related objectives, but equally pointed out that progress towards the programme's objective of harmonising funding decisions, joint programmes and a more coordinated effort at MS level was insufficient. Based on an uneven participation rate, the evaluation also recommended to ensure that all parts of Europe are well represented among the project participants and require each consortium to include at least two SMEs from two different member states.

Operationalisation of Eurostars is embedded in a complex structure. The programme is jointly implemented through Union contribution and the contribution by the member states. This set up is then mirrored in an implementation structure through the Eureka Association (ESE). It performs the duties as Eureka secretariat and equally the obligations following from Eurostars. ESE is in charge of the organisation of the calls for proposals, the verification of the eligibility criteria, the peer-review evaluation and the selection and the monitoring of projects, as well as the allocation of the Union contribution. The administrative costs for ESE are limited to 4% of the Union contribution (Art. 5.3).

A central aspect concerns the evaluation of proposals. It should be performed centrally by independent external experts under the responsibility of ESE following calls for proposals. A project ranking list is established. According to the Decision, it *"should be binding for the Participating States as regards the allocation of funding from the Union's financial contribution and from contribution from Participating States"* (Recital 20). Since the interim evaluation of Eurostars 1 this continues to be an issue of concern. While one would assume that the ranking of projects that have passed the threshold is the main criteria for their funding, the pre-fixed member states contributions – which are entirely spent on national beneficiaries – lead to the fact that projects higher up in the list cannot be implemented since one of the partners' national committed budget has already reached its limit. This leads to funding of projects that are lower in the ranking but where the national contribution is still available suggesting that also lower quality projects are funded. During Eurostars 2, an effort has been made on the side of the participating countries to provide

⁶⁸ There was no formal impact assessment for Eurostars which would have analysed the supply and demand of programmes at that time. Analysis of the Trendchart database of policy measures (2003–2013) suggests that most collaborative national and regional R&D programmes were not intended to enable international collaboration. There was however a remarkable growth in this form of measures over the years. See the analysis of Trendchart policy measures in: EC (2013): Lessons learned from a decade of innovation policy. Report by Technopolis Group.

⁶⁹ Majakov et al (2014).

⁷⁰ See Decision 5553/2014 EU, Recitals 5 and 8

sufficient funding for the 50 first ranked projects. This target is almost reached in all calls in Eurostars 2. The efforts needed at country level to enable at least the top 50 projects to be funded, seems to be anticipated at project proposal stage: In Eurostars 2, almost 70% of the projects have two or three partners only. From the point of view of the beneficiaries reasonable: a small consortium may be able to pass the individual checks at national level faster than a large one. The interim evaluation reasoned that the number of participants “*might determine the likelihood of being approved*” (p.29).

Linked to the project selection is the aspect of time to grant/contract. The partnership aimed to reach a time to grant (i.e., the time needed to sign the contract) average of 7 months for Eurostars 2. Under Eurostars 1, the average was 11.2 months. So far, an average of 8.1 months has been achieved. However, for several calls, there are still many contracts of projects not yet signed originating from the years 2016-2018. Once signed, this will increase the average time needed to grant per cut-off and overall (see below).

Figure 43: Time to contract 2014-2019

	Cut-off 1	Cut-off 2	Cut-off 3	Cut-off 4	Cut-off 5	Cut-off 6	Cut-off 7	Cut-off 8	Cut-off 9
Average	10.0	8.9	8.4	7.7	7.7	7.7	7.6	7.0	5.9
Median	9.0	7.8	7.8	7.2	6.9	7.3	7.2	7.1	7.0
Max	42.4	24.6	28.7	33.5	27.3	22.5	20.9	13.0	7.5
Min	3.5	4.3	3.6	4.2	3.9	3.9	3.9	3.6	3.9
Third Quartile	11.7	10.4	9.1	8.6	8.7	8.9	8.8	7.8	7.0
Dataset completion (%)	98%	96%	97%	90%	94%	91%	90%	81%	17%

Source: Eurostars Annual Report 2018, Table 8

The time to contract can be seen as an indication about the development state of a national innovation ecosystem. There are a number of countries where time to contract is done within a few weeks and others where this takes more than a year (see Figure 44).

Figure 44: Average time to contract by country and call (cut-off)

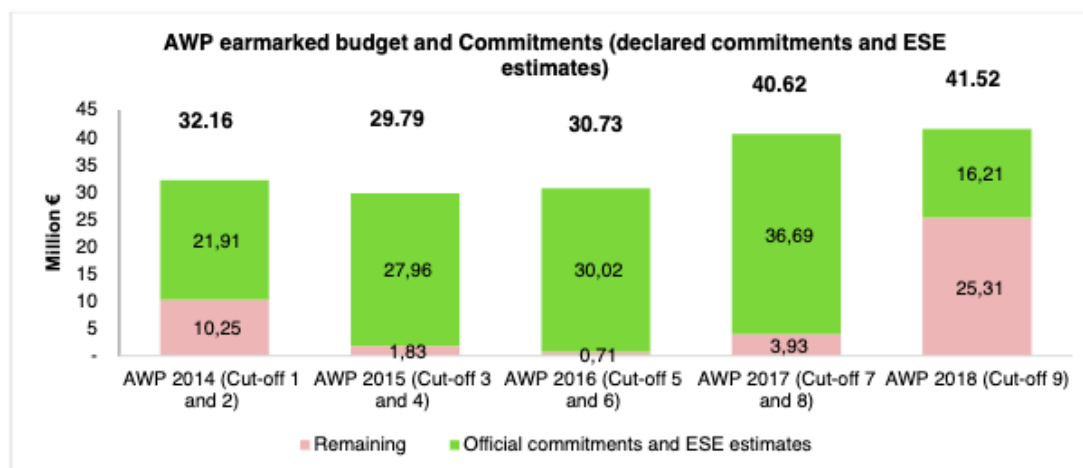
	Cut-off 1	Cut-off 2	Cut-off 3	Cut-off 4	Cut-off 5	Cut-off 6	Cut-off 7	Cut-off 8	Cut-off 9	Average
AT	9.1	7.6	7.4	6.4	8.7	6.4	6.5	6.7		7.4
BE	6.8	7.4	6.3	5.9	7.6	9.4	8.0	9.6		7.4
BG	14.5		21.4	15.0						16.7
HR					6.7	9.9	6.4	6.8		7.4
CY			10.6		8.1	12.2	11.2			10.5
CZ	20.8	14.9	9.0	7.7	7.1	7.9	6.8	6.9	6.9	9.5
DK	5.5	5.2	5.4	5.1	5.1	4.5	4.5	4.7		5.0
FI	3.6	5.8	6.3	7.7	3.9	4.8	4.9			5.0
FR	13.4	9.3	11.1	9.6	11.5	10.0	10.9	8.9		10.6
DE	7.1	8.4	8.4	8.3	6.6	7.4	7.6	7.9		7.8
HU		19.8	14.0	14.1	9.4	9.0	5.7			14.8
IS		6.2	3.9	8.3	7.1	4.4				6.3
IE				7.9		12.3	10.8			9.9
LV		18.6		7.9	10.6		9.2			12.8
LT		9.8	11.4	9.0	10.1	10.7	10.0	8.2		9.9
LU		10.6	8.7		6.6			4.8		8.2
NO	5.7	5.0	3.6	5.3	3.9	4.1	4.3	4.1	4.0	4.5
PL		8.2	9.9	7.7	16.5		11.5	8.2		9.4
PT				8.5		11.1	11.3			10.3
RO	21.8	14.5	9.0			8.9		7.1		11.1
SK	30.6	24.6	18.9		7.4	14.5	20.9			20.2
SI		10.0			6.6	4.9	5.7	3.6		5.8
ES	12.4	10.6	9.7	9.4	9.4	9.2	9.1	7.8		9.7
SE	10.5	7.7	7.9	5.6	5.5	5.0	6.3	5.9		6.7
CH	10.1	9.4	8.3	6.3	6.4	8.8	8.5	7.6	7.0	8.0
NL	6.7	6.3	7.8	7.5	7.3	7.1	6.6	7.2		7.1
TR	10.4	10.6	11.6	15.6	20.5	12.0	9.5	10.0		13.1
UK	12.3	12.0	11.1	8.9	10.4	8.0	7.6			10.2

Source: Eurostars Annual Report 2018, Table 9

These differences are disturbing since they are key for the project start. Since national innovation agencies know which ones are notorious delayed, they are likely to discourage collaboration with companies from these countries. This is one of the main weaknesses in a structure that relies on effective processes for more than 30 countries and it also explains why several widening countries are barely participating. Over the course of Eurostars 1 and 2 (thus almost 12 years so far), improvements were mainly achieved in countries which were already performing rather well but only limited in several widening countries.

The lack of strict and shorter deadlines for the national funding bodies lead to the fact that earmarked budget from the member states is paid late, that some positive evaluated projects cannot be funded and that a part of the EU contribution is equally not contracted. By the end of 2019, this excess, non-contracted budget, amounts to €26 million.

Figure 45: Status of the Union contribution (Top up)



Source: Eurostars Annual Report 2018, Chart 32

The overall participation rates and patterns of Eurostars 2 (2014- March 2019) show that 2.220 unique participants from 26 EU-MS and ten Eureka countries participated 2.838 times. For the EU countries only, 1.802 unique participants had 2.289 participations. Among the EU-MS, the largest numbers and highest shares can be found for Germany (18.2% of participants), the Netherlands (12.4%), and France (10.3%). Not participating so far were Estonia and Malta. Among the non-EU countries Sweden and Norway are participating strongly with shares of 9.7 % and 5.1% respectively.

Table 25: Overview of Eurostars 2 participation by type of stakeholder (absolute numbers)

Country	Private company	Large company	PRO	HEI	Private non-profit	Other	Participants	Participations	Participation ratio
Austria	61	8	4	6	2		81	114	1,41
Belgium	44	10	2	4	2		62	73	1,18
Bulgaria	6	1	0	1		1	9	11	1,22
Croatia	3	0	0				3	3	1,00
Cyprus	10	1	1	2			14	15	1,07
Czech Republic	24	0	1	5			30	33	1,10
Denmark	135	10	14	12	3	5	179	245	1,37
Finland	30	5	0	6			41	45	1,10
France	144	7	10	23	1		185	209	1,13
Germany	248	9	21	47	3		328	456	1,39
Greece	1	0	0				1	1	1,00
Hungary	16	1	0	3			20	21	1,05
Ireland	6	0	0	3			9	9	1,00
Italy	19	1	0	3			23	25	1,09

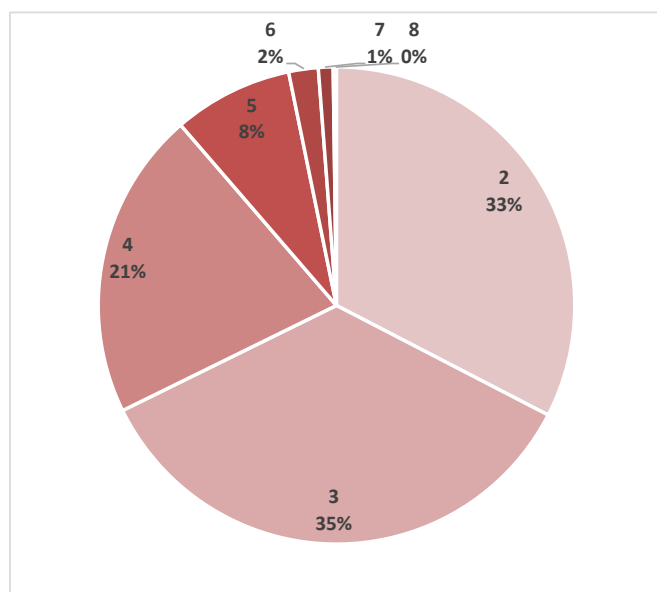
Country	Private company	Large company	PRO	HEI	Private non-profit	Other	Participants	Participations	Participation ratio
Latvia	4	1	3				8	8	1,00
Lithuania	22	0	3	1			26	31	1,19
Luxembourg		1	1	1	1		4	5	1,25
Netherlands	179	13	3	23	4	2	224	330	1,47
Poland	19	1	0				20	22	1,10
Portugal	8	0	2	4	1		15	16	1,07
Romania	8	2	1	2			13	20	1,54
Slovakia	6	0	0				6	7	1,17
Slovenia	13	2	0				15	15	1,00
Spain	155	18	0	1		1	175	192	1,10
Sweden	119	9	7	16	1	3	155	215	1,39
UK	149	3	0	2		1	155	167	1,08
Canada	18	1	0				19	19	1,00
Iceland	8	0	1	1			10	10	1,00
Israel	8	1	0				9	9	1,00
Korea	30	6	8	10	2	0	56	61	1,09
Norway	89	9	5	11	3	1	118	145	1,23
South Africa	2	0	0	1			3	3	1,00
Switzerland	129	18	9	20	3	1	180	275	1,53
Turkey	20	2	0				22	26	1,18
Ukraine		1	0				1	1	1,00
USA		0	0		1		1	1	1,00
Total/average							2220	2838	1,15

Source: Cordis ; calculation: Technopolis Group

Multiple participations can be observed in particular for universities and public research organisations. According to the Eurostars Annual report 2018, 77% of the applicants had previous experience with international cooperation while 23% hadn't. By type of participant, 90% of the academic partners and 73% of the industrial partners had previous international collaboration experience.

An average Eurostars 2 project brought so far 3.2 project partners from 2.3 countries together. It lasted for almost 2.5 years (26.7 months) and the average cost was € 1.34 million. As can be seen from Figure 46, one third of the projects had two participants and 35% had three. Larger consortia with five or more partners were rather the exception (11%).

Figure 46: Share of projects by number of participants (2014-2019)



Source: Eureka/Cordis database. Number of projects: 899

Comparing the demand for Eurostars 2 up to March 2019 to the overall Eurostars 1 in terms of unique participants, the following Table 26 provides an overview and comparison of unique beneficiaries between Eurostars 1 and Eurostars 2 (in absolute numbers and shares). As can be seen with the colouring (traffic light format) in the last column, seven EU-MS have increased in terms of unique beneficiaries (AT, DK, DE, LV, LT, NL, UK) In particular Denmark has almost doubled - from an already substantial number in Eurostars 1. For eight MS, the rate remained almost unchanged. In 13 EU-MS, the number of unique participants decreased – in some cases rather dramatically such as Italy, but also Portugal, Greece and Estonia have seen large decreases.

Among the non-EU countries, Norway and Switzerland enjoy an increase and are both rather strong users of Eurostars 2. From the non-European countries, Korea has increased its participation considerably, obtaining an overall share in the programme of 2.5%

Some of the lower figures can be explained with funding difficulties (such as Estonia) or the difficulty to reach a funding commitment (Italy).

Table 26: Participation by country Eurostars 1 and 2(data cut off: March 2019)

Country	Number of unique participants ES1	Share (in %)	Number of unique participants ES2	Share (in %)	Absolute increase (green)/ decrease (red)/ no significant change (orange)
Austria	75	3.3	81	3.6	Orange
Belgium	63	2.8	62	2.8	Purple
Bulgaria	1	0.0	9	0.4	Red
Croatia	1	0.0	3	0.1	Purple
Cyprus	14	0.6	14	0.6	Purple
Czech Republic	34	1.5	30	1.4	Red

Country	Number of unique participants ES1	Share (in %)	Number of unique participants ES2	Share (in %)	Absolute increase (green)/ decrease (red)/ no significant change (orange)
Denmark	91	4.0	179	8.1	
Estonia	21	0.9			
Finland	43	1.9	41	1.8	
France	258	11.5	185	8.3	
Germany	297	13.2	328	14.8	
Greece	45	2.0	1	0.0	
Hungary	21	0.9	20	0.9	
Ireland	13	0.6	9	0.4	
Italy	131	5.8	23	1.0	
Latvia	4	0.2	8	0.4	
Lithuania	17	0.8	26	1.2	
Luxembourg	3	0.1	4	0.2	
Malta	1	0.0			
Netherlands	168	7.5	224	10.1	
Poland	26	1.2	20	0.9	
Portugal	49	2.2	15	0.7	
Romania	20	0.9	13	0.6	
Slovakia	7	0.3	6	0.3	
Slovenia	23	1.0	15	0.7	
Spain	186	8.3	175	7.9	
Sweden	163	7.2	155	7.0	
United Kingdom	145	6.4	155	7.0	
Non EU countries					
Norway	92	4.1	118	5.3	
Switzerland	134	6.0	180	8.1	
Iceland	11	0.5	10	0.5	

Country	Number of unique participants ES1	Share (in %)	Number of unique participants ES2	Share (in %)	Absolute increase (green)/ decrease (red)/ no significant change (orange)
Israel	49	2.2	9	0.4	
Turkey	29	1.3	22	1.0	
Russia	3	0.1			
Ukraine	1	0.0	1	0.0	
United States	2	0.1	1	0.0	
Canada	1	0.0	19	0.9	
Mexico	1	0.0			
Brazil	1	0.0			
China	1	0.0			
Korea	2	0.1	56	2.5	
Taiwan	1	0.0			
Thailand	1	0.0			
South Africa			3	0.1	
Total	2249	100.0	2220	100.0	

Source: Eureka Secretariat, Compilation: Technopolis Group

Figure 47: Overview of projects submitted and funded

	N° of projects submitted	N° of projects approved	N° of projects withdrawn	N° of projects to be monitored
Cut-off 1 (Mar2014)	299	70	5	65
Cut-off 2 (Sep2014)	356	90	7	83
Cut-off 3 (Mar2015)	266	96	9	87
Cut-off 4 (Sep2015)	333	113	7	106
Cut-off 5 (Feb2016)	299	103	3	100
Cut-off 6 (Sep2016)	374	108	10	98
Cut-off 7 (Mar2017)	402	119	5	114
Cut-off 8 (Sep2017)	415	102	5	97
Cut-off 9 (Mar2018)	357	99	3	96

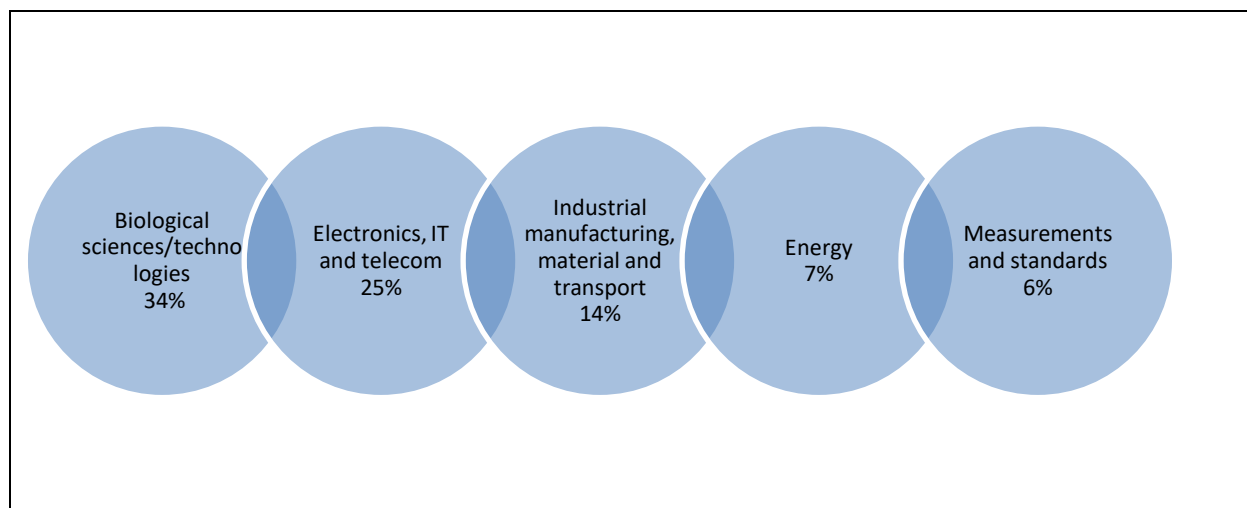
Source: Eurostars Annual Report 2018, Table 10

Figure 48: Overview of project funding by call

Cut-off reference	COD1	COD2	COD3	COD4	COD5	COD6	COD7	COD8	COD9	COD10	Total
(year of evaluation results)	2014	2014	2015	2015	2016	2016	2017	2017	2018	2018	
Total costs of approved projects (M€)	99.55	135.86	140.12	151.07	149.94	161.43	178.07	157.32	139.00	135.1	1,447.46
Total funding earmarked (M€)	72.48	71.13	69.17	70.87	69.75	70.41	76.66	77.34	78.99	75.78	732.58
Total funding overview (based on DoCs received + ESE estimates, when DoC not received) (M€)	45.55	62.36	65.82	72.91	72.02	72.36	83.77	66.74	66.11	65.75	673.4
Union funding earmarked (M€)	16.80	15.96	15.98	16.03	16.06	16.23	20.22	20.40	20.86	18.16	176.7
Union funding based on the DoCs received +ESE estimates, when DoC not received	8.97	12.94	12.64	15.32	14.94	15.08	20.30	16.40	16.21	16.26	149.04

Source: Eurostars Annual Report 2018

Figure 49: Top5 Technological areas of submitted projects



Source: Eureka general presentation

Appendix F Additional information related to coherence

Table 27: Mapping of relevant SME programmes under the 2021-20127 budget period

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
<p>SME Instrument (under Horizon 2020), becoming the:</p> <p>EIC Accelerator (under the upcoming European Innovation Council-EIC)</p>	<p>Supporting SMEs in pursuing high-risk/high-potential innovation ideas, enter new markets & become European “growth champions”.</p> <p>Fund high-potential, high-risk innovation (particularly deep-tech companies).</p>	SMEs (mono-beneficiaries), particularly in deep-tech industry, having a business plan for scaling-up.	<p>Horizon Europe,</p> <p>€10 billion proposed</p>	<p>Strategy and policy is performed by the European Commission, DG RTD.</p> <p>Operational management in dedicated unit/body.</p>	<p>Offer grants of up to €4 million to promote collaborative, inter-disciplinary research and innovation on science-inspired and radically new technologies.</p> <p>Blended finance (combination of grant and equity).</p> <p>Business Accelerating Services (BAS): coaching and mentoring, access to international roadshows, etc.</p>	TRLs 4-7	
InnovFin – EU Finance for innovators (which is linked to Eureka’s investment readiness activities)	Facilitate and accelerate access to finance for innovative businesses and other innovative entities in Europe	SMEs, large firms and research institutions (EU Member States and Associated Countries)	<p>EU funds (in forms of loans, guarantees and equity-type funding), guaranteed by the EIB Group</p> <p>InnovFin wants to reinforce the complementarity with the European Fund</p>	<p>Managed by the European Investment Bank Group (EIB and EIF) in cooperation with the European Commission under Horizon 2020.</p> <p>Advisory branch helping SMEs</p>	<p>Early-stage and SME financing: (a) InnovFin Equity: whole spectrum of early stage investing and includes the following products: InnovFin Technology Transfer, InnovFin Business Angels, InnovFin Venture Capital and InnovFin Fund-of-Funds; (b) InnovFin SME Guarantee provides guarantees and counter-guarantees on debt financing</p>	Approx. TRLs 5-9	

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
			for Strategic Investments (EFSI)	and other firms structure their R&D projects in order to improve their access to finance.	<p>of between EUR 25 000 and EUR 7.5m, in order to improve access to loan finance for innovative small and medium-sized enterprises and small midcaps. Under InnovFin SME Guarantee, financial intermediaries are guaranteed or counter-guaranteed against a portion of their potential losses by the EIF.</p> <p>Corporate financing: InnovFin Emerging Innovators, InnovFin MidCap Guarantee and InnovFin Corporate Research Equity.</p> <p>InnovFin Advisory aims to improve the “bankability” and investment-readiness of large projects that need substantial, long-term investments. The main clients foreseen are promoters of large R&I projects that meet Horizon 2020's Societal Challenges.</p> <p>Science and Thematic financing: InnovFin Science,</p>		

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
					InnovFin Energy Demonstration Projects, InnovFin Infectious Diseases Finance Facility and InnovFin Thematic Investment Platforms.		
EIT Regional innovation scheme & KICs	<p>Widen participation in the EIT Innovation Communities' activities by engaging players from countries that have lower participation.</p> <p>Sharing good practice, experience and know-how emerging from the EIT Communities' activities with local innovation ecosystems.</p> <p>Offer tailor-made services to address identified innovation gaps.</p>	<p>SMEs, large firms and research institutions (EU Member States and Associated Countries, who are modest or moderate innovators on the European Innovation Scoreboard-EIS).</p> <p>Each Innovation Community cooperates with local innovators – individuals such as</p>	Horizon Europe	<p>Local organisations are selected through an open competitive selection process and are designated to function as an EIT Hub for a specific Innovation Community.</p> <p>Network of Knowledge and Innovation Communities (KICs) that bring together businesses, research centres and universities.</p>	<p>EIT RIS Accelerator (by EIT Climate-KIC) provides education, training, networking opportunities and grants to businesses at the forefront of climate change adaptation and mitigation.</p> <p>ARISE Venture Programme (by EIT Digit) supports the establishment of deep-tech-based ventures.</p> <p>InnoStars Awards programme (by EIT Health) for business development and product validation.</p> <p>PowerUp! (by EIT InnoEnergy) competition for energy, cleantech, mobility, cybersecurity and smart city start-ups in Central and Eastern Europe.</p>	TRLs 1-9	

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
	Contribute to boosting innovation in EIT RIS countries by strengthening linkages among key innovation actors.	students, researchers, entrepreneurs, and organisations such as SMEs, universities, research labs, regions, NGOs and cities.			EIT Jumpstarter (by EIT Health, EIT Food and EIT Raw Materials) for early stage entrepreneurs, to help research move from lab to market.		
Single Market Programme (in current budget period parts of it in COSME , and InnoSup the latter, implemented under Horizon 2020)	Ease access to finance for SMEs in all phases of their lifecycle – creation, expansion, or business transfer; Support expansion and grow of SMEs, in particular those operating across borders; Help businesses to access markets in the EU and beyond, by funding the EEN which helps businesses to fund	SMEs, entrepreneurs; Financial beneficiaries (e.g. guarantee organisations, banks, leasing companies);	EU budget. Single Market programme. Suggested budget: €4 bn Grants (to consortia implementing the EEN project for COSME and Horizon 2020 services)	Strategy and policy is performed by the European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. Operational management is provided by the Executive Agency for SMEs (EASME).		n.a.	

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
	<p>partners and understand EU legislation;</p> <p>Support the creation of a business-friendly environment, by reducing administrative and regulatory burden on SMEs;</p>						
<p>InvestEU, which builds on the successful model of the European Fund for Strategic Investments (EFSI), one of the three pillars of the Investment Plan for Europe</p>	<p>Overcome current market failures by addressing market gaps and mobilising private investment.</p> <p>Support four policy areas: sustainable infrastructure; research, innovation and digitisation; small and medium-sized businesses; and social investment and skills.</p>	<p>Companies of all sizes, including small and medium-sized enterprises (with up to 250 employees) and midcaps (with up to 3,000 employees)</p> <p>Utilities</p> <p>Public sector entities</p>	<p>EU funds (EIB)</p> <p>Suggested budget: €3 bn</p>	<p>EFSI is managed by the European Investment Bank (EIB), and projects supported by EFSI are subject to the normal EIB project cycle and governance (and supervised by a Steering Board).</p> <p>In addition to the EIB Group, international financial institutions</p>	<p>The InvestEU Advisory Hub: Advisory services, guaranteed by: (a) European Investment Advisory Hub (EIAH), which shares good practices, lessons learnt and real-life case studies on project finance and project management; (b) European Investment Project Portal (EIPP), where worldwide investors and EU project promoters can meet and identify new investment opportunities.</p> <p>The InvestEU Fund: which includes former COSME financial instruments: (1) Guarantees and counter-</p>	<p>TRLs 1-9</p>	<p>InvestEU would encompass several financing programmes (former COSME, InnovFin SME guarantees, etc.), which overlaps Eurostars in terms of beneficiaries and objectives.</p> <p>As in Eurostars, the InvestEU presents a decentralised management of the Financial Contribution</p>

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
(Juncker Plan)		National promotional banks or other banks to deliver intermediated lending Investment funds		active in Europe - such as the European Bank for Reconstruction and Developments (EBRD), the World Bank and the Council of Europe Bank - and national promotional banks, working jointly in groups so that they can cover at least three Member States, will have direct access to the EU guarantee.	guarantees for financial intermediaries (Loan Guarantee Facility, LGF); (2) Loans and equity capital (investments in risk-capital funds that provide venture capital and mezzanine finance). The InvestEU Portal: An easily accessible database that matches projects with potential investors worldwide.		(Member States may add to the EU guarantee's provisioning by voluntarily channelling up to 5% of their Cohesion Policy Funds to these compartments).
New European Cluster Policy (also proceeding from InnoSup instrument, under Horizon	Raising the innovation capacity and competitiveness of cluster companies (i.e. SMEs) by connecting ecosystems;	Specialised SMEs (which often gather in Clusters).	EU funds under Single Market Programme	The European Cluster Excellence Initiative (ECEI) is managed by the European Secretariat for Cluster Analysis and the	International cluster matchmaking events European strategic cluster partnerships (ESCPs) 'Clusters go international', launched under COSME to help establish and develop	TRLs 1-9	Overlaps in terms of objectives and results, particularly as the instruments under the European Cluster Policy aim at creating international

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
2020, and initially launched under COSME)	<p>Assisting companies to access global markets successfully; foster internationalisation of cluster companies (i.e. SMEs);</p> <p>Helping regional and national policymakers develop and implement their research and innovation strategies for smart specialisation.</p>			European Foundation for Cluster Excellence.	European strategic cluster partnerships.		consortia, supporting internationalisation of SMEs
New Enterprise Europe Network (new-EEN, since 2022, following call in 2020)	<p>Helping Small and Medium-sized Enterprises (SMEs) innovate and grow internationally;</p> <p>Foster the digitalisation of SMEs (help</p>	Members include technology poles, innovation support organisations, universities and research	EU funds (no direct funding to beneficiaries). Funded through the Single Markrt Programme	Strategy and policy is performed by the European Commission, Directorate-General for Internal Market, Industry,	Advisory Services to grow and expand into international markets: (a) Innovation support; (b) Access to finance; (c) Research funding; (d) Expert advice on EU law and standards; (e) Expert advice on Intellectual Property Rights (IPRs).	n.a.	National innovation agencies participating to Eurostars are also part of EEN.

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
	<p>businesses to benefit from opportunities given by digital transformation);</p> <p>Improve the resilience to economic crisis and sustainability of SMEs;</p>	<p>institutes, regional development organisations and chambers of commerce and industry (in more than 60 countries worldwide).</p> <p>Network member organisations, grouped in regional consortia, are selected through calls for proposals.</p>	Organisations in non-EU countries can apply on a self-financing basis.	<p>Entrepreneurship and SMEs.</p> <p>Operational management is provided by the Executive Agency for SMEs (EASME).</p>	<p>Networking opportunities with business or academic partners to manufacture, distribute, co-develop and supply products, ideas and services: (a) Partnering opportunities; (b) Cooperation database (profile research); (c) Matchmaking events.</p> <p>Dialogue with businesses (consultation and feedback mechanisms for EU policymaking).</p>		
European Structural and Investment Funds: European Regional Development Fund and Cohesion Fund.	The ERDF will support the five new policy objectives of cohesion policy: (Policy Objective 1) promote smart growth, (2) promote green economy (low-carbon Europe,	SMEs (priority to less developed regions; for the Cohesion Fund, Member States whose Gross National Income per inhabitant is less than 90	EU funds	European Commission	<p>Grants</p> <p>Financial instruments (loans, microcredit, guarantees and equity)</p>	n.a.	

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
	<p>green and blue investment, the circular economy); (3) Enhance mobility and regional ICT connectivity; (4) Implement the European Pillar of Social Rights; (5) Foster the sustainable and integrated development of urban, rural and coastal areas and local initiatives close to the citizens.</p> <p>ERDF mainly funding Policy Objectives 1 and 2 (Member States will be required to earmark 6% of their ERDF resources to sustainable urban development, while 30 % of the overall financial</p>	<p>% of the EU average)</p>					

Programme	Objectives	Beneficiaries	Source of funding	Management, operations	Actions, instruments	TRLs of the funded projects	Overlaps with Innovative SMEs
	<p>envelope of the ERDF is expected to contribute to climate objectives, 37% in case of the CF).</p> <p>Cohesion Fund mainly funding Policy Objectives 2 and 3.</p> <p>Cohesion Fund specifically supporting environmental and transport infrastructure projects, including trans-European networks (TEN-T).</p>						

Appendix G Additional information related to the policy options descriptions

G.1 Degree of coverage of the different functionalities by policy option

Table 28: Type and composition of actors (including openness and roles)

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
<p>What is possible? Any legal entity in a consortium can apply to Horizon Europe calls in ad hoc combinations Calls are open to participation from across Europe and the world (not all entities from third countries are eligible for funding)</p>	<p>What is possible? Partners can include any national funding body or governmental research organisation, Possible to include also other type of actors, including foundations.</p>	<p>What is possible? Partners can include MS and Associated Countries.</p>	<p>What is possible? Suitable for all types of partners: private and/or public partners, including MS, regions, foundations. By default open to AC/ 3rd countries, but subject to policy considerations. Can cover a large and changing community. HE rules apply by default to calls included in the FP Work Programme, so any legal entity can apply to these.</p>	<p>What is possible? Suitable for all types of partners: private and/or public partners, including MS, foundations. By default open to legal entities from AC/ 3rd countries, but subject to policy considerations. In case of countries participating non-associated third countries can only be included as partners if foreseen in the basic act and subjected to conclusion of dedicated international agreements HE rules apply by default, so any legal entity can apply to partnership calls.</p>
<p>What is limited? Systematic/ structured engagement with public authorities, MS, regulators, standard making bodies, foundations and NGOs.</p>	<p>What is limited? Requires substantial national R&I programmes (competitive or institutional) in the field. Usually only legal entities from countries that are part of the consortia can apply to calls launched by the</p>	<p>What is limited? Non-associated third countries can only be included as partners if foreseen in the basic act and subjected to conclusion of dedicated international agreements. Needs good geographical coverage – participation of at least 40% of Member States is required</p>	<p>What is limited? If MS launch calls under their responsibility, usually only legal entities from countries that are part of the consortia can apply to these, under national rules</p>	<p>What is limited? Requires a rather stable set of partners (e.g. if a sector has small number of key companies). Basic act can foresee exceptions for participation in calls / eligibility for funding.</p>

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
	<p>partnership, under national rules.</p>	<p>Requires substantial national R&I programmes (competitive or institutional) in the field.</p> <p>While by default the FP rules apply for eligibility for funding/participation, in practice (subject to derogation) often only legal entities from countries that are Participating States can apply to calls launched by the partnership, under national rules.</p>		
<p>What is not possible? To have a joint programme of R&I activities between the EU and committed partners that is implemented based on a common vision.</p>	<p>What is not possible? To have industry/ private sector as partners.</p>	<p>What is not possible? To have industry/ private sector as partners.</p>		

Table 29: Type and range of activities (including flexibility and level of integration)

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
<p>What is possible?</p> <p>Horizon Europe standard actions that allow <i>broad range of individual activities</i> from R&I to TRL 7 or sometimes higher.</p> <p>Calls for proposals published in the Work Programmes of Horizon Europe (adopted via comitology).</p>	<p>What is possible?</p> <p>Activities may range from R&I, pilot, deployment actions to training and mobility, dissemination and exploitation, but according to national programmes and rules.</p> <p>Decision and implementation by “beneficiaries” (partners in the co-fund grant agreement) e.g. through institutional funding programmes, or by “third parties” receiving financial support, following calls for proposals launched by the consortium.</p>	<p>What is possible?</p> <p>Horizon Europe standard actions that allow a broad range of coordinated activities from R&I to uptake.</p> <p>In case of implementation based on national rules (subject to derogation) Activities according to national programmes and rules.</p> <p>Allows integrating national funding and Union funding into the joint funding of projects</p>	<p>What is possible?</p> <p><i>Horizon Europe standard actions</i> that allow a broad range of coordinated activities from R&I to uptake.</p> <p>The association representing private partners allows to continuously build further on the results of previous projects, including activities related to regulations and standardisation and developing synergies with other funds</p> <p>Union contribution is implemented via calls for proposals published in the Work Programmes of Horizon Europe based on the input from partners (adopted via comitology).</p> <p>Open and flexible form that is simple and easy to manage.</p>	<p>What is possible?</p> <p><i>HE standard actions</i> that allow to build a portfolio with broad range of activities from research to market uptake.</p> <p>The back-office allows dedicated staff to implement integrated portfolio of projects, allowing to build a “system” (e.g. <i>hydrogen</i>) via pipeline of support to accelerate and scale up the take-up of results of the partnership, including those related to regulations and standardisation and developing synergies with other funds. E.g. setting up biorefinery plants and promoting their replication by additional investments from MS/private sector.</p> <p>Procuring/purchasing jointly used equipment (e.g. HPC)</p> <p>Allows integrating national funding and Union funding into the joint funding of projects</p>
<p>What is limited?</p>	<p>What is limited?</p> <p>Scale and scope of the programme the resulting funded R&I actions and depend on the participating programmes, typically</p>		<p>What is limited?</p> <p>Limited control over precise call definition, resulting projects and outcomes, as they are implemented by EC agencies.</p>	<p>What is limited?</p> <p>Limited flexibility because objectives, range of activities and partners are defined in the Regulation, and negotiated in the Council (EP).</p>

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
	smaller in scale than FP projects			
<p>What is not possible?</p> <p>To design and implement in a systemic approach a portfolio of actions.</p> <p>To leverage additional activities and investments beyond the direct scope of the funded actions</p>				

Table 30: Directionality

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
<p>What is possible?</p> <p>Strategic Plan (as implementing act), annual work programmes (via comitology). Possible also to base call topics on existing or to be developed SRIA/roadmap</p>	<p>What is possible?</p> <p>Strategic R&I agenda/roadmap agreed between partners and EC</p> <p>Annual work programme drafted by partners, approved by EC</p> <p>Objectives and commitments are set in the Grant Agreement.</p>	<p>What is possible?</p> <p>Strategic R&I agenda/roadmap agreed between partners and EC</p> <p>Objectives and commitments are set in the legal base.</p> <p>Annual work programme drafted by partners, approved by EC</p> <p>Commitments include obligation for financial contributions (e.g. to administrative costs, from national R&I programmes).</p>	<p>What is possible?</p> <p>Strategic R&I agenda/roadmap agreed between partners and EC</p> <p>Objectives and commitments are set in the contractual arrangement.</p> <p>Input to FP annual work programme drafted by partners, finalised by EC (comitology)</p> <p>Commitments are political/best effort, but usually fulfilled</p>	<p>What is possible?</p> <p>Strategic R&I agenda/roadmap agreed between partners and EC</p> <p>Objectives and commitments are set in the legal base.</p> <p>Annual work programme drafted by partners, approved by EC (veto-right in governance)</p> <p>Commitments include obligation for financial contributions (e.g. to administrative costs, from national R&I programmes).</p>
<p>What is limited?</p> <p>No continuity in support of priorities beyond the coverage of the strategic plan (4 years) and budget (2 years Annual work programme).</p>				
<p>What is not possible?</p> <p>Coordinated implementation and funding linked to the concrete objectives/ roadmap, since part of overall project portfolio managed by agency</p>				

Table 31: Coherence (internal and external)

Option 0: Horizon Europe calls	Option 2: Co-funded	Option 3: Institutionalised Art 185	Option 1: Co-programmed	Option 3: Institutionalised Art 187
<p>What is possible? Coherence between different parts of the Annual Work programme of the FP ensured by EC</p>	<p>What is possible? Coherence among partnerships and with different parts of the Annual Work programme of the FP can be ensured by partners and EC Synergies with national/regional programmes and activities</p>	<p>What is possible? Coherence among partnerships and with different parts of the Annual Work programme of the FP can be ensured by partners and EC Synergies with national/regional programmes and activities Synergies with other programmes</p>	<p>What is possible? Coherence among partnerships and with different parts of the Annual Work programme of the FP can be ensured by partners and EC If MS participate: Synergies with national/regional programmes and activities Synergies with industrial strategies</p>	<p>What is possible? Coherence among partnerships and with different parts of the Annual Work programme of the FP can be ensured by partners and EC Synergies with other programmes or industrial strategies If MS participate: Synergies with national/regional programmes and activities</p>
<p>What is limited? Synergies with other programmes or industrial strategies</p>	<p>What is limited? Synergies with other programmes or industrial strategies</p>	<p>What is limited? Synergies with industrial strategies</p>	<p>What is limited? Synergies with other programmes</p>	
<p>What is not possible? Synergies with national/regional programmes and activities</p>				

