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PART 1/9

**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**EU Africa global health partnership (Global Health EDCTP3)**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Executive Summary Sheet (Max 2 pages)</b>
<b>Impact assessment on a potential EU-Africa global health partnership (Global Health EDCTP3)</b>
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>Poverty-related and neglected infectious diseases remain the main cause of death, disability and ill health in many countries, with low- and middle-income countries having the highest burden. In addition, partly because of environmental and climate changes an increasing number of pathogens are emerging, or are re-emerging with new characteristics, causing outbreaks such as COVID-19. These can spread rapidly around the globe causing huge human and economic suffering in many countries, including in Europe. Although there have been substantial developments in the field, especially in terms of new therapies, the rise in antimicrobial resistance is reducing the efficacy of existing treatments, and the available vaccines are not always sufficiently effective. New health technologies, such as precise diagnostic tests, therapeutic treatments and preventive vaccines are needed to alleviate the burden of infectious diseases and ensure that people live healthy and productive lives, especially in the most vulnerable and affected region, namely sub-Saharan Africa.</p>
<b>What should be achieved?</b>
<p>The EU-Africa global health partnership (Global Health EDCTP3) aims to reduce the burden of infectious diseases in sub-Saharan Africa and to help control emerging infectious diseases globally. This will be achieved by working in partnership with sub-Saharan African countries on a common research and innovation (R&amp;I) strategic agenda to:</p> <ul style="list-style-type: none"> <li>• advance the development of efficient new or improved health technologies;</li> <li>• coordinate R&amp;I efforts;</li> <li>• strengthen R&amp;I capacity for tackling infectious diseases; and</li> <li>• increase R&amp;I preparedness, early detection and control of (re-)emerging infectious diseases in sub-Saharan Africa and at global level.</li> </ul>
<b>What is the value added of action at the EU level (subsidiarity)?</b>
<p>Coordinated and coherent EU action will help to overcome fragmentation of R&amp;I funding, attract a critical mass of organisations and the investment required to address this global health challenge, and facilitate collaboration and a strategic response to (re-)emerging infectious diseases. It will also increase the impact and cost-effectiveness of European action and investment. A partnership that can bring together the EU, European countries, African countries, other third countries and private global health funders will have a major impact at global level.</p>
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
<p>To achieve these objectives, in addition to the traditional framework programme calls, the following four options were considered:</p> <ul style="list-style-type: none"> <li>• a co-programmed European partnership;</li> </ul>

- a co-funded European partnership;
- an institutionalised partnership under Article 185 of the EU Treaty;
- an institutionalised partnership under Article 187 of the Treaty.

An institutionalised partnership under Article 187 is the preferred option. This will allow countries other than EU Member States and Associate States, e.g. sub-Saharan Africa and other third countries, to be involved. The Article 187 option will also allow collaboration with industry and charitable foundations, which can help advance the common R&I agenda. This option has the highest capacity to leverage funds and to have the greatest impact.

#### **What are different stakeholders' views? Who supports which option?**

The stakeholders were unanimous in their preference for an institutionalised European partnership under either Article 185 or 187. The Article 187 option would bring together a wider range of public and private stakeholders, which would help ensure long-term commitment, financial certainty and an efficient organisational structure, leading to a higher potential impact.

### **C. Impacts of the preferred option**

#### **What are the benefits of the preferred option (if any, otherwise of main ones)?**

Long-term and coherent support for infectious diseases R&I activities, networks, research capacities and knowledge exchange between institutions and European and sub-Saharan African countries will reduce the burden of disease in sub-Saharan Africa, and better control (re-)emerging infectious diseases in sub-Saharan Africa and at global level. With its focus on clinical research, the partnership's impact would take the form of effective health technologies that are ready for production, distribution and sale.

#### **What are the costs of the preferred option (if any, otherwise of main ones)?**

The cost of running the dedicated implementing structure would be less than €6 million per year, depending on the amount of the total budget. There would also be a €0.3 million one-off cost to set up the structure.

#### **What are the impacts on SMEs and competitiveness?**

SMEs will be able to participate in the partnership calls. The impact for them is not expected to differ from normal framework programme calls. However, significant opportunities - particularly in the digitalisation of health technologies - could lead to the growth of the SME sector in Europe and Africa.

#### **Will there be significant impacts on national budgets and administrations?**

The partnership will help streamline Member States' spending on infectious diseases R&I, including on international cooperation. It will also help sub-Saharan Africa countries plan the budgets of their national health research systems.

#### **Will there be other significant impacts?**

The partnership will support R&I in vaccines, diagnostics and medicines for infectious diseases that primarily affect low- and middle-income countries, helping to ensure healthy lives and the wellbeing of people of all ages (SDG3) and to end poverty in all its forms everywhere (SDG1).

**Proportionality?**

The preferred option provides all the elements to achieve the objectives and does not go beyond what is necessary to solve the problem.

**D. Follow-up****When will the policy be reviewed?**

The policy will be reviewed in line with the timescale set out in the Horizon Europe Regulation and with the requirements to be laid down in the relevant basic act.



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**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership on Innovative Health**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Impact assessment of a European Partnership on Innovative Health</b>
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>The EU suffers from the fact that its excellent health research does not translate sufficiently into innovative products and services to improve people’s health. In parallel, the EU is at risk of losing its global leadership in health and care. These problems result from:</p> <ul style="list-style-type: none"> <li>- incomplete understanding of diseases;</li> <li>- insufficient collaboration between academia and the health industry;</li> <li>- limited collaboration across industry sectors; and</li> <li>- market barriers that affect the uptake of innovation in health and care.</li> </ul> <p>If not tackled, these problems will result in a decline of health research and innovation (R&amp;I) activities in the EU and in limited improvement in the quality of healthcare, negatively impacting public health and wellbeing. The proposed initiative addresses these challenges and responds to the main recommendation from the interim evaluation of the predecessor initiative, the Innovative Medicines Initiative 2 Joint Undertaking (IMI2 JU), i.e. to enable the active engagement of industry sectors other than the pharmaceutical industry.</p>
<b>What should be achieved?</b>
<ul style="list-style-type: none"> <li>- a contribution to the creation of an EU-wide health R&amp;I ecosystem that facilitates the translation of scientific knowledge into innovations that respond to the needs of end-users, patients and healthcare professionals;</li> <li>- a facilitated development of people-centred innovations that address unmet public health needs; and</li> <li>- a more competitive EU health industry thanks to enhanced cross-sectoral collaboration.</li> </ul>
<b>What is the value added of action at the EU level (subsidiarity)?</b>
<p>Health challenges are global in nature and so is the R&amp;I needed to address them. Most health-related legal frameworks regulating the development and market introduction of novel health technologies (e.g. on clinical trials, medicinal products, medical devices, in-vitro diagnostics and advanced therapies) are based on EU regulatory frameworks. Most companies active in the field of health have an EU-wide presence. The initiative’s scope and scale go beyond the capacity of individual Member States and require the mobilisation of resources and stakeholders at EU level.</p>
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
<p>The options are as follows:</p> <ul style="list-style-type: none"> <li>- regular Horizon Europe calls;</li> <li>- a co-programmed partnership; and</li> <li>- an institutionalised partnership under Article 187 TFEU.</li> </ul> <p>An institutionalised partnership is the preferred option. It offers the best ratio of cost versus impact, also</p>

taking account of the associated risks, and promises to deliver efficiently on the objectives and achieve the expected impacts.
<b>What are different stakeholders' views? Who supports which option?</b>
The institutionalised partnership option enjoyed the most support in all consultation activities, in all stakeholder categories (Member States, industry associations, researchers, public authorities, NGOs and the general public). Thanks to long-term commitment and funding, it was considered to be the most effective in terms of scientific, economic and societal impacts. The legally binding arrangement was appreciated as offering confidence, in particular on intellectual property management, hence facilitating the sharing of data required to realise impacts. All stakeholder groups, but in particular the public sector, saw the opportunity to play a key role in research agenda setting as crucial for achieving societal impact.
<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option (if any, otherwise of main ones)?</b>
An institutionalised partnership would best ensure that the private and public sectors remain fully engaged in the implementation of a jointly agreed, long-term strategy for health R&I. It is consistent with leveraging industrial financial and in-kind resources to maximise the impact of EU funding. It would support the development of a strategy for health innovation that is fully aligned with the Commission's political priorities. The preferred option would also enable the setting-up of a Programme Office for dedicated administrative support, coordination and communication activities.
<b>What are the costs of the preferred option (if any, otherwise of main ones)?</b>
The EU and member industry associations will jointly fund the partnership, with the latter providing at least 50% of the total budget. The partners will also need to mobilise the resources required to cover the operational costs of funded actions and the administrative costs of the Programme Office. The associations will also undertake additional activities, as stipulated in the legislative act.
<b>What are the impacts on SMEs and competitiveness?</b>
Thanks to the close interaction of the health industry (including SMEs) with academia, all partners would strengthen their scientific base to deliver innovative health solutions. Thereby, and with the early involvement of other public health actors, the industry would be able to respond better to the needs of end-users, i.e. patients, healthcare professionals and health care providers. It would also improve their competitive position in global markets and strengthen the EU's economy and technological sovereignty. The integration of several industry sectors would create a more agile and SME-friendly collaborative R&I ecosystem.
<b>Will there be significant impacts on national budgets and administrations?</b>
No significant impact on national budgets and administrations.
<b>Will there be other significant impacts?</b>
Positive contribution on fundamental rights (right to health and right to access to health care, including preventive and treatment-related care); Newly developed data-based health products and digital tools could have implications for the handling of personal health data and hence privacy rights;

The digital tools could positively impact the ‘smart health’ value chain and standardisation, supporting EU industrial leadership;

No impact on simplification, regulatory aspects or administrative burdens.

**Proportionality?**

The preferred option is proportional to what is necessary to tackle the problems in question.

**D. Follow up**

**When will the policy be reviewed?**

The initiative would be reviewed in line with the Horizon Europe provisions and decisions to be laid down in the relevant Council Regulation.





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**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a European Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership for Key Digital Technologies**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

## Executive Summary Sheet

### Impact assessment of a potential institutionalised European partnership on key digital technologies

#### A. Need for action

##### What is the problem and why is it a problem at EU level?

‘Key digital technologies’ (KDTs) are electronic components and systems that underpin all digital products and services. They are viewed as key because they are the basic building blocks of digital systems.

If the EU does not maintain its leadership in electronic components and systems, it risks losing its strong market position in sectors such as automotive, healthcare, industrial manufacturing, aerospace and security.

It also risks being a follower in emerging paradigms and technologies, such as artificial intelligence (AI) and edge computing, and associated markets which are creating demand for electronic components and systems that will need to exhibit levels of performance that differ from those available today.

A major problem the EU would face is security of supply of trusted, safe and secure component technologies for critical infrastructures and industrial sectors that are vital for the economy.

The non-alignment of these KDTs with the EU’s political priorities would deprive it of a major instrument for leveraging the digital transformation in addressing its societal and environmental goals.

##### What should be achieved?

An R&I effort of sufficient scale and with a sufficient degree of coordination to assemble a critical mass of resources, organise multiple competences and interests, and direct them towards a common agenda with the following goals to be achieved by 2030:

1. *Reinforce the EU’s technology sovereignty in electronic components and systems to support future needs of ‘vertical’ industries and the economy at large*

Ensure that the EU stays at the forefront of technology in advanced electronic components and systems contributing to resilient strategic value chains. This will be increasingly critical as digital transformation unfolds and digital technologies become more pervasive across sectors.

Greater sovereignty should translate into a doubling in the value of the design and production of electronic components and systems in the EU by 2030, in line with its weight in products and services in general.

2. *Establish EU scientific excellence and innovation leadership in emerging components and systems technologies*

Further miniaturisation towards physical limits, the rapid penetration of AI, and the emergence of edge computing and alternative computing paradigms open new opportunities for electronics components and systems and their applications. A solid scientific base in emerging areas can enable the EU to seize such opportunities. SMEs and start-ups active in emerging technologies can benefit from and help shape new ecosystems.

SMEs should account for least a third of the total number of participants in a KDT initiative and receive at least 20% of public funding.

3. *Ensure that components and systems technologies address the EU’s societal and environmental*

## *challenges*

EU and national public authorities would play an essential role in a coordinated initiative ensuring its alignment with political priorities. Electronic components and systems technologies should provide the right levels of trust and privacy, and contribute to EU environmental objectives.

The initiative would target a reduction in energy consumption of 32.5% by 2030<sup>1</sup>.

### **What is the value added of action at the EU level (subsidiarity)?**

Electronic components and systems underpin industrial value chains that have significant social and economic impact across Europe.

The fast pace of technological progress in the industry, coupled with the fact that the United States and Asian countries are investing massively in order to be at the cutting edge and to minimise their dependencies on other regions, demands a coordinated response at EU level.

No single country or organisation would be able to deliver on the above objectives. Only mobilisation at EU level, involving Member States and industry, will ensure the necessary strategic approach and critical mass of resources, competences and interests.

### **B. Solutions**

#### **What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?**

The following options were considered as means to support R&I:

- traditional calls under the framework programme (baseline option);
- a co-programmed European partnership (option 1); and
- an institutionalised European partnership under Article 187 TFEU (option 3).

An institutionalised European partnership is the preferred option, as it would ensure that the wider electronic components and systems industry takes an active role in setting the R&I agenda, together with public authorities (at EU and national levels), to meet the above-mentioned goals. It would enable sustainable commitment from the partnership members over an agreed 7-year programme and provide a stable structure for efficient implementation and for coordination with related initiatives. Interaction would be sought in particular with digital-centric partnerships (e.g. photonics, EuroHPC, SNS, AI, data and robotics) and application areas (health, automotive, manufacturing, space).

The assessment found that this option provides the most ‘directionality’ (ensuring alignment with an R&I agenda) and ‘additionality’ (securing leveraging effects).

#### **What are different stakeholders’ views? Who supports which option?**

When Member States were consulted on Horizon Europe partnerships, 96% considered a partnership on KDT relevant for their national policies and priorities, and for their industry, research organisation and universities.

In the open public consultation, 82% of respondents indicated that a KDT initiative would be relevant or very relevant for securing access to trusted components and systems. In particular, this view was

<sup>1</sup> Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (OJ L 328, 21.12.2018, p. 210).

supported by industry associations, universities, RTOs, Member States and large companies.

Many respondents (over 40%) found the institutionalised partnership the most suitable option. This represents a balanced cross-section of industry (large firms and SMEs), research organisations and Member States. Stakeholders interviewed for the study supporting the impact assessment also strongly backed this option.

Minority views (e.g. from research organisations) indicated that this option carried a risk of greater complexity. However, the harmonisation and simplification of procedures and practices are addressed in the proposed initiative.

### **C. Impacts of the preferred option**

#### **What are the benefits of the preferred option (if any, otherwise of main ones)?**

A partnership based on Article 187 TFEU could:

- support an EU strategic R&I agenda (SRIA) on electronic components and systems technologies, aligning EU, participating states' and industry priorities to achieve a critical mass;
- count on upfront contribution commitments from public (EU and national) and private members in the partnership;
- provide a centrally managed structure that supports the long-term engagement of private members for the implementation of an ambitious programme; and
- deliver a high leverage of 1:3 combining EU financing with contributions from Member States and industry (€1 from the EU, €1 from participating states, €2 from private members), for the mobilisation of a critical mass of R&I resources.

#### **What are the costs of the preferred option (if any, otherwise of main ones)?**

As a future KDT initiative would adopt the current ECSEL structure, the cost of implementing the preferred option is the running cost of a joint undertaking office for the period of the initiative. This cost is largely offset by the benefits mentioned above, in particular the leverage effects of co-financing to reach the scale of resources necessary to address the ambitious goals. The ECSEL joint undertaking would be adapted to the KDT partnership and overall implementation costs would remain the same.

#### **What are the impacts on SMEs and competitiveness?**

One recommendation from the interim assessment of ECSEL is to stimulate more active involvement by SMEs. The focus on emerging technologies and the objective of building design capacity (areas in which SMEs are particularly active) is likely to attract a higher number of small companies to the initiative in more relevant roles. Specific activities are envisaged (e.g. technology access and experimentation) to involve small suppliers and users in the ecosystem.

#### **Will there be significant impacts on national budgets and administrations?**

The KDT partnership is based on a tri-partite model (Commission, Member States and industry) with financial contributions and administrative involvement from participating states (Member States and associated countries). This model is currently used successfully in the ECSEL joint undertaking.

#### **Will there be other significant impacts?**

In the development and adoption of electronics components and systems technologies, fundamental rights will be taken into account, in particular citizens' safety, security and privacy.

**Proportionality?**

The preferred option provides all the elements to achieve the objectives and does not go beyond what is necessary.

**D. Follow-up**

**When will the policy be reviewed?**

The partnership will be reviewed regularly at project, technology/sector and programme levels. A mid-term evaluation by an independent panel of experts is planned after 3 years of operation. Regular evaluations will assess progress with respect to the initiative's objectives, expected impacts and contribution to EU policy priorities.



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**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership for Smart Networks and Services**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Executive Summary Sheet (Max 2 pages)</b>
Impact assessment on a potential institutionalised European partnership on smart networks and services <sup>1</sup>
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>The European networks and services industry is facing industrial competitiveness and technology sovereignty challenges with regard to the deployment of 5G infrastructures as a basis for digital lead markets, and research and innovation on 6G systems. Problems include:</p> <ul style="list-style-type: none"> <li>• Europe’s inability to exploit the full potential of the digitalisation of the economy;</li> <li>• limited technological sovereignty as regards critical technologies of smart network and service value chains, in particular due to ever-increasing global competition for European suppliers;</li> <li>• slow deployment of infrastructure platforms for digital lead markets; and</li> <li>• limited interest in addressing societal issues such as climate change through digital solutions.</li> </ul> <p>The main problem drivers are:</p> <ul style="list-style-type: none"> <li>✗ 5G’s insufficient capabilities to respond to advanced communication and computing requirements;</li> <li>✗ the insufficient presence of EU actors in global digital value chains;</li> <li>✗ the lack of integration of EU value chains;</li> <li>✗ the slow development of 5G;</li> <li>✗ the need for cybersecurity, ethics and privacy; and</li> <li>✗ the lack of energy efficiency.</li> </ul> <p>The above issues are expected to lead to limited technological sovereignty as regards critical technologies of smart networks and services value chains, a lack of infrastructure platforms for innovation and a risk of lagging behind in research on 6G-based networks and services.</p>
<b>What should be achieved?</b>
<p>The goal is to ensure technological sovereignty as regards smart networks and services value chains. In this context, the aim is to enable European players to develop the R&amp;I capacities for 6G technologies as a basis for future digital services in the period to 2030. The initiative also aims to foster the development of lead markets for 5G infrastructure and services in Europe. Both set of activities (for 5G infrastructure deployment and 6G R&amp;I) will foster the alignment of future smart networks and services with EU policy and societal needs, including energy efficiency, privacy, ethics and cybersecurity.</p>
<b>What is the value added of action at the EU level (subsidiarity)?</b>
<p>This partnership will address cross-border/transnational challenges, the pooling of resources, strategic roadmaps, the need for critical mass to meet policy objectives and the need to coordinate different actors across different sectors of the digital economy, which cannot be tackled as effectively by Member States acting alone, in particular as regards R&amp;I on 6G systems.</p>

<sup>1</sup> ‘Smart networks and services’ is a working title; it will be adjusted following high-level political guidance in time for the adoption of the Commission proposal.

<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
<p>The options are as follows:</p> <ul style="list-style-type: none"> <li>• baseline option — traditional calls under the framework programme;</li> <li>• option 1 — co-programmed European partnership;</li> <li>• option 2 — institutionalised European partnership.</li> </ul> <p>The preferred option is option 2, which is likely to have the biggest scientific, economic and societal impact and greater coherence, although it is the most costly and complex.</p>
<b>What are different stakeholders' views? Who supports which option?</b>
<p>Stakeholders have recognised the importance of a partnership approach for Europe's future networks and services ecosystem across digital value chains. The consultation indicated a preference for a co-programmed or an institutionalised partnership, but many respondents, including the key players, also stressed that they are open to both models, depending on a number of administrative and legal factors.</p>
<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option (if any, otherwise of main ones)?</b>
<p>The benefits are clearly maximised under the institutionalised partnership option (option 2) which would:</p> <ol style="list-style-type: none"> <li>1. be more effective, especially in terms of economic, technological and societal impacts, by securing stronger stakeholder commitment and contributing to regulation and standardisation activities, and to public policies including technological sovereignty and 'green deal' objectives;</li> <li>2. improve external coherence by effective outreach to other initiatives and a clear mandate to establish synergies with EU, national and regional programmes, in particular for deployment; and</li> <li>3. offer very good overall efficiency, despite additional costs.</li> </ol>
<b>What are the costs of the preferred option (if any, otherwise of main ones)?</b>
<p>The costs relate to the establishment of a joint undertaking and its operation.</p>
<b>What are the impacts on SMEs and competitiveness?</b>
<p>EU companies in the field of networking, cloud computing and the 'internet of things' will benefit most, as will companies in 'vertical' industries. The initiative should also help them to maximise the effectiveness of R&amp;D investments and speed up the development process, which would improve their competitiveness. EU SMEs and micro-enterprises in the field will experience direct and indirect economic benefits. The partnership will not impose regulatory obligations on them; rather, it will open up opportunities in terms of cost reduction for the design of new products and help them gain easier access to investment to deploy marketable solutions at EU scale.</p>
<b>Will there be significant impacts on national budgets and administrations?</b>



The impact on national budgets and administration will be limited to governance participation.
<b>Will there be other significant impacts?</b>
There will be positive impacts on competitiveness, global standardisation and related trade and investment.
<b>Proportionality?</b>
The preferred option does not exceed what is necessary to solve the original problem.
<b>D. Follow up</b>
<b>When will the policy be reviewed?</b>
The partnership will be reviewed in line with the standard Horizon Europe policy on reviewing partnerships, probably involving annual key performance indicator (KPI) reviews and in-depth review at mid-term and towards the end of Horizon Europe.



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**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership for transforming Europe's rail system**

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<b>Executive Summary Sheet (Max 2 pages)</b>
Impact assessment on a European partnership for transforming Europe's rail system
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>The problem to be addressed is the failure of the rail industry to develop a common vision for change by allowing for the rapid utilisation of modern technologies (especially digitalisation and automation) to deliver a fully interoperable flexible and cost-efficient rail system.</p> <p>The drivers are:</p> <ul style="list-style-type: none"> <li>• fragmentation of the industry – the effective use of most innovations in a very complex system requires coordination between Member States, between infrastructure and rolling stock, and between developers of different subsystems;</li> <li>• a need for coherence between R&amp;I and standardisation/regulation;</li> <li>• limited and uncoordinated participation in R&amp;I;</li> <li>• high R&amp;I costs, risks and lead-time; and</li> <li>• insufficient alignment.</li> </ul> <p>The consequences, which affect all stakeholders along the value chain, are that the rail sector:</p> <ul style="list-style-type: none"> <li>✗ makes a limited contribution to a more sustainable transport system;</li> <li>✗ is dependent on bespoke products, which are expensive and inflexible in operation; and</li> <li>✗ is less competitive <i>vis-à-vis</i> other modes of transport.</li> </ul>
<b>What should be achieved?</b>
<p>The main objectives are:</p> <ul style="list-style-type: none"> <li>➤ to modernise rail in Europe so that it can increase its market share;</li> <li>➤ to support rail freight in order to reduce greenhouse gas emissions from transport; and</li> <li>➤ to advance the completion of a single European railway area by delivering on an integrated and sustainable rail system taking full advantage of digitalisation and automation.</li> </ul> <p>In turn, this would enhance the rail industry's contribution to societal development in the EU, increasing the capability and capacity of rail freight, and ensure that rail-related R&amp;I is based on a user-centric approach better attuned to market needs.</p>
<b>What is the value added of action at the EU level (subsidiarity)?</b>
<p>A common European strategy for rail-related R&amp;I would help ensure a more coordinated, market-focused approach capable of bringing stakeholders together to deliver on a common overall vision. This would enable the rail industry to meet European transport and broader policy objectives, increasing the attractiveness of rail transport in comparison to other modes.</p>
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not,</b>

<b>why?</b>
<p>The options are to support rail R&amp;I through:</p> <ul style="list-style-type: none"> <li>• traditional Horizon Europe calls;</li> <li>• a co-programmed partnership; or</li> <li>• an institutionalised partnership under Article 187 TFEU.</li> </ul> <p>The institutionalised partnership is the preferred option, since it is the only one that provides a platform for the common development of R&amp;I serving a coherent overall vision. It is also best at providing a long-term strategy and commitment from industry and the EU. It has proved its value in the current S2R joint undertaking. The stability of this option and the legally binding commitments from the EU and industry partners would be key to involving stakeholders in the aftermath of the Covid-19 outbreak and its expected economic impacts, which could include cuts in the sector R&amp;I investment.</p>
<b>What are different stakeholders' views? Who supports which option?</b>
<p>Over 65% of respondents indicated that institutionalised partnerships were the most appropriate way of addressing rail challenges and transforming the European rail system. In particular, they cited the entire product development cycle, long-term commitment and market uptake.</p>
<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option (if any, otherwise of main ones)?</b>
<p>An institutionalised partnership is the best way of ensuring that the private and public sectors remain fully engaged in the development and implementation of a long-term strategy for rail R&amp;I, while encouraging broad participation from key stakeholders. This option ensures substantial scientific, economic, technological and societal impacts, e.g. market uptake of innovative solutions and emissions reductions. Also, it will leverage industrial financial and in-kind resources to maximise the impact of Commission funding.</p>
<b>What are the costs of the preferred option (if any, otherwise of main ones)?</b>
<p>The S2R joint undertaking costs €3.5 million (€1.6 million administrative + €1.9 million staff costs) per year of operation. Its total running costs cannot exceed €27 million (50% from the EU; 50% from other members). These baseline costs should be adapted on the basis of the ambition, programme and budget of the Transforming Europe's Rail System candidate partnership.</p>
<b>What are the impacts on SMEs and competitiveness?</b>
<p>Wide stakeholder participation and the creation of networks linking universities and research-based organisations under the coordination of the future partnership would foster greater involvement by SMEs, who have the flexibility to develop innovations and bring them to market relatively rapidly.</p> <p>An institutionalised partnership would have a significant impact on the competitiveness of both the rail transport industry and the rail supply industry. It would ensure that a high proportion of R&amp;I outputs would be taken up by the market.</p>
<b>Will there be significant impacts on national budgets and administrations?</b>
<p>An institutionalised partnership would be able to simplify the administration relating to the members'</p>

<p>participation in the R&amp;I activities. It could ensure alignment between developing national rail R&amp;I programmes and thus better overall use of public resources.</p>
<p><b>Will there be other significant impacts?</b></p>
<p>The initiative would:</p> <ul style="list-style-type: none"> <li>✓ strengthen significantly the rights of EU citizens through a greater emphasis on the integration of national, regional and local rail systems with other modes; and</li> <li>✓ enable effective dialogue between those engaged in R&amp;I activity and those responsible for rail policy and regulation at international and national level (including international standards bodies).</li> </ul>
<p><b>Proportionality?</b></p>
<p>An institutionalised partnership would ensure that the private and public sectors remain fully engaged in the development and implementation of a long-term strategy for rail R&amp;I, and leverage industrial financial and in-kind resources to maximise the impact of Commission funding and deliver on the ‘green deal’ priorities. Therefore, the preferred option does not exceed what is necessary to solve the original problem and meet the objectives of the initiative.</p>
<p><b>D. Follow up</b></p>
<p><b>When will the policy be reviewed?</b></p>
<p>An interim evaluation of the proposed institutionalised partnership would be carried out after it has been in operation for 3 years.</p>



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PART 6/9

**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership for Integrated Air Traffic Management**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

Impact assessment on the European partnership on integrated air traffic management
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>Despite the significant progress that has been made in the past decade on modernising air traffic management (ATM) infrastructure, up to 10% of CO<sub>2</sub> emissions generated by flights are caused by a fragmented ATM infrastructure that does not take full advantage of digitalisation and automation; these emissions could be avoided. In addition, the COVID-19 crisis has had a significant impact on air transport and exposed the weaknesses of current ATM systems. Never before has there been such pressure on the ATM infrastructure to become more cost-efficient, resilient and scalable to fluctuations in traffic, and to accommodate new types of air vehicle.</p> <p>The innovation cycle in ATM should also be shortened, allowing industrial players in the sector to remain competitive and support a wide range of applications in transport (e.g. passengers, cargo, drones and urban air mobility), defence and security (civil-military cooperation in airspace management).</p> <p>Addressing these multiple problems in a rapidly evolving and complex context requires a substantial collective effort to boost cooperation and investment in innovations that cannot be addressed by any single stakeholder or Member State acting alone. Aviation is by nature international and requires common, coordinated action.</p>
<b>What should be achieved?</b>
<p>The objective is three-fold:</p> <ol style="list-style-type: none"> <li>1) bring European ATM into the digital age to make it more resilient and scalable to fluctuations in traffic;</li> <li>2) strengthen the competitiveness of manned and unmanned air transport in the EU, to support economic growth and recovery in a post-COVID context;</li> <li>3) establish the ‘single European sky’ as the most efficient and environment-friendly airspace in the world.</li> </ol>
<b>What is the value added of action at the EU level?</b>
<p>EU intervention (funding and coordination) is needed to ensure that efforts to achieve the above objectives are accelerated and better focused<sup>1</sup>. In practice, this means bringing together all relevant stakeholders in the sector, from manufacturers to air navigation service providers, airlines, airports, research institutes and the military, to develop transformative and interoperable technologies that respond to the above challenges. If the problems are not addressed through strong EU coordinated intervention, it is likely that national programmes will emerge on an <i>ad hoc</i> basis, especially in a post-COVID world, resolving local issues but increasing fragmentation of the European ATM network.</p>
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
<p>Policy options (POs) differ by the degree of flexibility and additionality/directionality:</p> <p><b>PO0:</b> Horizon Europe calls – strategic research agenda set and confirmed by the Commission, with input from the industry;</p> <p><b>PO1:</b> co-programmed European partnership – R&amp;I agenda is agreed and coordinated with the partnership and used by the Commission for implementation in the work programme;</p>

<sup>1</sup> In line with recent ECA recommendations, SR 18/2018, SR 11/2019.

**PO2:** institutionalised European partnership under Article 187 TFEU – the partnership members will have a high degree of influence in developing the strategic research agenda, annual work programmes and call topics, through a transparent and accessible process, adopted by the governing board of the partnership, on which both the EU and the partners are represented.

**PO1** offers somewhat lower cost and greater flexibility than **PO2**, thanks to an organic, evolving membership structure and the scope for adapting the R&I agenda.

**PO2** is the preferred option, as it establishes the most efficient platform, able to accelerate the delivery of the greatest benefits (see below). As compared with **PO1**, it also has greater directionality and stronger commitment from stakeholders, including inter-governmental organisations such as Eurocontrol, the EU Aviation Safety Agency (EASA) and the European Space Agency (ESA).

**PO2** is marginally the most expensive option, but with over 60% of the costs covered by private partners and the greatest ability to deliver the expected impacts, it delivers the best value for the Union budget.

#### **What are different stakeholders' views? Who supports which option?**

Overall, there is a high level of agreement between stakeholders on the problems, objectives and preferred option for the future. Over 70% of answers in the public consultation supported the re-establishment of the institutional partnership under Article 187 TFEU, pointing out that the sector needs strong EU intervention to steer a single European R&I programme that continuously involves stakeholders along the whole value chain to deliver interoperable solutions that, once deployed, improve the performance and safety of ATM systems in the EU.

Other main views:

- The partnership should have better links between R&I and industrialisation;
- It should support market uptake and deployment;
- Administrative procedures should be simplified;
- There should be closer engagement with EASA and national authorities, better synergies with R&I partnerships and national initiatives, and better links with academia.

#### **C. Impacts of the preferred option**

##### **What are the benefits of the preferred option (if any, otherwise of main ones)?**

**Scientific impacts:** strengthen the EU's scientific capabilities and knowledge in ATM; widen the competences of the next generation of aviation professionals;

**Economic/technological impacts:** increased scalability and safety of ATM systems; new opportunities for the drones market to grow; strengthen global leadership role of the European aerospace and aviation industry;

**Social impacts:** reduced aviation noise and gas emissions by a margin equal to the CO<sub>2</sub> emissions of a large EU metro area (e.g. Madrid); improved passenger experience (reduced travel time, delays and costs, and better connectivity).

##### **What are the costs of the preferred option (if any, otherwise of main ones)?**

The main additional costs compared with **PO0** are the preparation and running costs of the back office of the partnership. However, when taking account of the financial leverage (co-financing rates) and the total budget available for each policy option, assuming a similar Union contribution, the cost of the preferred policy option exceeds that of the most efficient one by 1-2 percentage points only. In addition, experience has shown that other partners, including institutional ones, are willing to cover over 60% of the administrative costs of the joint undertaking.



<b>What are the impacts on SMEs and competitiveness?</b>
SMEs are likely to play an important role in the partnership, as they are well represented in digital technologies and data and drone activities. Having an open partnership structure and open calls will make it easier for SMEs to participate than in the past.
<b>Will there be significant impacts on national budgets and administrations?</b>
No impact on national budgets and administrations is expected, thanks to the alignment of strategies. The active involvement of Member States in the partnership would strengthen their commitment to the resulting technologies and increase their uptake and synchronised deployment across the EU.
<b>Will there be other significant impacts?</b>
The proposed partnership will be instrumental in providing the relevant scientific and technological evidence in aviation to help policymakers and regulators adopt the best regulatory measures to address the challenges of climate change and digitalisation.
<b>Proportionality?</b>
In PO1, partners have flexibility to join or leave the partnership. The R&I agenda can also be easily adapted as the technology or other requirements evolve.  PO2 demands a stronger (financial) commitment, which is justified by the increased effectiveness and ability to accelerate the much-needed digital transformation of ATM.
<b>D. Follow up</b>
<b>When will the policy be reviewed?</b>
The Commission will review the mode of implementation 3 years after creation of the partnership.



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PART 7/9

**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership on Clean Aviation**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Executive Summary Sheet (Max 2 pages)</b>
<b>Impact assessment of the European Partnership on Clean Aviation</b>
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
<p>The ecological footprint of aviation is growing because the growth of air transport outpaces the incremental technological and operational improvements that are being introduced. In addition, the path to climate neutral aviation is unclear, as solutions developed in other sectors cannot easily be introduced in aviation. During 2019 in the EU, aviation represented €823bn, or 4.1% of EU GDP, providing 12.2m jobs. To maintain the EU European industrial leadership and technological sovereignty on a global scale, while at the same time achieving the Green Deal in aviation, there is a strong need to accelerate the deployment of EU R&amp;I aviation solutions. A mobilisation of the currently fragmented R&amp;I capacity of the entire European aviation value chain is required to develop climate neutral technologies within the Green Deal's timescale.</p>
<b>What should be achieved?</b>
<p>The primary objective is, responding to the European Green Deal, to contribute to climate neutrality by 2050, with an intermediate step around 2030, by accelerating the development of climate neutral aviation technologies. Together with the large-scale deployment and use of new, net-zero or fully decarbonised sustainable aviation fuels such as power-to-liquid synthetic fuels, methane and/or hydrogen, the operating fleet in 2050 could achieve a 90+% improvement in carbon efficiency compared to today's fleet. The second general objective would be to ensure that aeronautics-related R&amp;I activity contributes to the global competitiveness of the EU aviation industry by ensuring that cleaner aviation remains safe, secure and efficient for the transportation of passengers and goods by air. The third objective would be to further advance the European R&amp;I capacity to accelerate and optimise the R&amp;I process. Beyond industrial leadership, aviation research will also focus on education, strengthening and integrating the EU scientific capacity and creating more R&amp;I intensive SMEs.</p>
<b>What is the value added of action at the EU level (subsidiarity)?</b>
<p>The rationale for EU intervention stems from the enormous complexity of the endeavour, and the related need for risk sharing, considering the high costs of developing and demonstrating innovative technological solutions. Neither a single aeronautics company, nor all the companies from a single country combined, could design a new civil aircraft, and achieve climate neutrality for aviation. Furthermore, all research needs should be coherent with market measures and incentives, as well as requiring a robust and modern regulatory and standardisation framework, which can only be designed at the EU level and via international co-operation. At the same time, EU action allows for effective co-operation at European scale, creating synergies with other sectors, and with countries without a large aviation industry.</p>
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
<p>The preferred option is to support the collaborative and fundamental research through traditional Horizon Europe calls, next to an institutionalised public-private partnership (PPP) under Article 187 TFEU dedicated to the acceleration of the development of climate neutral aviation technologies for earliest possible deployment. An institutionalised PPP, unlike the other options of only traditional calls or a contractual PPP, offers the necessary level, depth and length of commitment.</p>

<b>What are different stakeholders' views? Who supports which option?</b>
During the public consultation on the Impact Assessment study, 80% of the respondents suggested that a European institutionalised partnership would have a significant (positive) effect on and be “very relevant” to increasing industrial leadership in clean aviation technologies and the uptake of new technologies. Traditional calls are not considered fit for ensuring technology uptake. The stakeholders confirmed their commitment in a Joint Declaration (2019 Le Bourget Paris Airshow) and developed a Strategic Research and Innovation Agenda (SRIA) for the partnership. The public consultation held on the SRIA, underscored the high stakeholders and public interest. Stakeholders underlined that Clean Aviation should maintain its focus on climate neutrality despite the hard-hitting COVID-19 crisis.
<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option (if any, otherwise of main ones)?</b>
The implementation of the Clean Aviation initiative through an institutionalised partnership would best ensure that the private and public sectors remain fully engaged in the research needed for development and deployment of climate neutral solutions in line with the Green Deal requirements. It is consistent with leveraging industrial financial and in-kind resources, to maximise the impact of EU funding.
<b>What are the costs of the preferred option (if any, otherwise of main ones)?</b>
The existing Clean Sky 2 Joint Undertaking receives €1.755bn in EU funding, and at least €2.19bn from private members. The collaborative aviation R&I programme in Horizon 2020 and FP7 were €0.5bn and €0.8bn respectively. The ambitious targets of climate neutrality by 2050 and the new coherent cycle of aviation research towards 2050, and not forgetting that aviation is hard affected by the COVID-19 crisis, justify an increase (of the order of 25% for each of the two pillars of R&I).
<b>What are the impacts on SMEs and competitiveness?</b>
Similar to the calls of the other programmes about 20% of the partners are SMEs. In the Clean Sky 2 programme, just over 40% of the partners selected in the 10 calls for proposals to date (60% of total programme) were SMEs, about a quarter of funds in these calls. Leading in climate neutral aviation, would benefit EU aviation’s competitiveness.
<b>Will there be significant impacts on national budgets and administrations?</b>
No particular impact is expected on national budgets.
<b>Will there be other significant impacts?</b>
The proposed partnership would naturally create synergies with the proposed European Partnership on Integrated Air Traffic Management, but also other relevant PPPs. Both the hydrogen initiative and the batteries initiative could have a huge impact as enablers of climate neutral aviation, if their deliverables respond to the needs of the aviation sector.
<b>Proportionality?</b>
The preferred option is proportionate to the scale of the problem, given the trans-national nature and complexity and cost of aviation and its R&I.
<b>D. Follow up</b>
<b>When will the policy be reviewed?</b>
Using an interim evaluation, biennial Strategic Research and Innovation Agenda review, and the option of an independent Impact Evaluator is being investigated for R&I uptake. The role of the Clean Aviation Governing board will be strengthened compared to H2020 Clean Sky 2 for better strategic guidance and

project follow-up.



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PART 8/9

**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership on Circular Bio-based Europe**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Executive Summary Sheet (Max 2 pages)</b>
Impact assessment on a European partnership for a circular bio-based Europe (CBE)
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
There are both economic and environmental problems, which are addressed in parallel. The main problem is the ‘triple deficit’ on the level of innovation, market uptake and the sustainability. As a result, R&I activities are not sufficiently integrated in the EU, leading to a slower innovation process. In parallel, existing mature bio-based solutions are hindered from reaching markets and their environmental performance is not automatically safeguarded. The main scientific and technological problems CBE addresses are the insufficient R&I and cross-sectoral cooperation and transfer of knowledge on sustainable and circular bio-based solutions.
<b>What should be achieved?</b>
The overall objective is to drive forward the societal transition to a sustainable bio-based economy by increasing R&I on sustainable and competitive solutions to increase circularity, and use of biomass, residues and waste. It also aims to take a regional approach when implementing the UN Sustainable Development Goals (SDGs) and the EU Green Deal in order to accelerate the transition to the ‘Healthy Planet’ concept. The scientific objectives are to improve the R&I capacity on circular bio-based solutions and ensure better knowledge sharing, within and between value chains, and across Europe, and to include R&I on sustainability issues. The economic objectives are to improve the competitiveness of European regions in the sector and to address market failures of the European bio-based industry by keeping innovation and new biorefineries within Europe. The main societal objectives are to contribute to a circular economy that operates sustainably, and to improve the bio-based sector’s circularity, thus improving its environmental footprint.
<b>What is the value added of action at the EU level (subsidiarity)?</b>
The initiative combines expertise and technologies available in EU Member States, regions and value chains, thereby creating additional synergies. CBE projects can be combined with national projects and with projects supported by EU structural and regional funds. Addressing most of the barriers to a bio-based economy is not a national responsibility, but is rather subject to EU-level regulation, with rules for example on: aspects of the sustainable biomass supply; market pull via targets; product standardisation; labelling and green public procurement schemes; and environmental performance. Without EU-level intervention, there would be insufficient action at national level.
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
The following options were considered as a means to support R&I: <ul style="list-style-type: none"> <li>• traditional calls under the framework programme (baseline option);</li> <li>• a co-programmed European partnership (option 1); and</li> <li>• an institutionalised European partnership under Article 187 TFEU (option 3).</li> </ul> Although both partnership options would deliver better results than normal calls, an institutionalised one

(option 3) would be better than a co-programmed one. This option had the highest overall score, due to greater potential economic and social impacts and higher coherence with external programmes.

Option 3 is the preferred arrangement for the following reasons:

- It can effectively achieve the programme's objectives by involving committed industry partners and other actors (e.g. Member States, regions, academia and civil society organisations) who would work together under an appropriate governance model.
- It provides adequate transparency and openness in the selection of priorities and objectives and the involvement of partners and stakeholders from across the entire value chain, from different sectors, backgrounds and disciplines, including international actors (when relevant and not interfering with European competitiveness).
- Its formalised procedures will enable SME participation, as well as the dissemination and use of results.
- It provides high additionality, namely high potential for structuring the bio-based industries.
- It ensures directionality by formalising partners' commitments to meeting specific targets, which will eventually help achieve high-level policy objectives.
- On financing, it features financial and/or in-kind contributions from partners other than the EU of between 50% and 75% of the total European partnership budget. It is expected that most of the financial commitment will be in-kind and - to a lesser extent - take the form of financial contributions within projects rather than at programme level.
- Its coherence and synergies within the EU R&I landscape will be ensured through formal agreements between the proposed initiative and other initiatives, as well as through co-creative agenda-setting and the commitment of the support team.

### What are different stakeholders' views? Who supports which option?

The majority (more than 50%) of respondents to the public consultation indicated that many of the partnership's objectives were essential, particularly achieving EU climate goals. Respondents viewed developing consortia, European value chains and technology as advantages, but considered the administrative burden to be a disadvantage. The biggest problem is considered the EU innovation gap in translating research results into innovative circular bio-based products. A majority (more than 50%) consider industry involvement to be very relevant, and the scope and coverage of the partnership to be correct. While most stakeholders (54%) responding to the consultation consider an institutionalised partnership to be the best arrangement to address the problems, a lower support was noted from citizens.

### C. Impacts of the preferred option

#### What are the benefits of the preferred option (if any, otherwise of main ones)?

All actors in the bio-based economy can potentially benefit **economically**, allowing a balanced regional/local development. Higher and more secure income for primary producers of biomass is expected, also in less-favoured regions. Other benefits are economic growth for SMEs, stronger leverage of investments for biorefineries and their economic operators (industry actors), and the long-term engagement and commitment of all actors. Municipalities and regions are expected to gain by saving on biologic waste disposal costs.

The **societal impact** is expected to be improved access to and take-up of innovative bio-based solutions in Europe, empowerment of local/regional communities to manage their natural resources, and the creation (or improved reconversion) of a new local/regional manufacturing base. Market actors such as brand-



<p>owners and consumers will have access to more sustainable products.</p> <p>Most important are the <b>environmental impacts</b>. Producing and processing biomass more sustainably and using biowaste as raw material will reduce CO<sub>2</sub> emissions and help avoid conflicts with food production, the over-extraction of biomass, and unsustainable land-use changes. This will help to preserve and restore ecosystems and biodiversity. Closed-loop production and valorising bio-waste will increase circularity. CBE will improve the resource efficiency of value chains, e.g. by recovering nutrients for agriculture and forestry from waste streams (including wastewater) and agricultural residues.</p>
<p><b>What are the costs of the preferred option (if any, otherwise of main ones)?</b></p>
<p>As option 3 would build on the existing Bio Based Industries structure it would involve the running costs of a Joint Undertaking office for the duration of the initiative. This would involve €30 million in administrative costs for businesses and the same amount for the EU. This represents 1-2% of the initiative's overall costs. This cost is largely offset by the benefits mentioned above, and in particular the leverage effects of co-financing to reach the scale of resources necessary to address the ambitious goals.</p> <p>No negative economic, social and environmental impacts or compliance costs are expected.</p>
<p><b>What are the impacts on SMEs and competitiveness?</b></p>
<p>No negative effects are expected for SMEs and competitiveness. All impacts are expected to be positive. Based on the very positive experience with BBI JU (strong SME involvement in projects, including their coordination), option 3 scores high on this aspect.</p>
<p><b>Will there be significant impacts on national budgets and administrations?</b></p>
<p>No impacts on national budgets and administrations or implementation difficulties are expected.</p>
<p><b>Will there be other significant impacts?</b></p>
<p>No, as all have been described above.</p>
<p><b>Proportionality?</b></p>
<p>The preferred option provides all the elements to achieve the objectives and does not go beyond what is necessary to solve the problem.</p>
<p><b>D. Follow up</b></p>
<p><b>When will the policy be reviewed?</b></p>
<p>In line with the timescale set out in the Horizon Europe Regulation, the interim evaluation will be carried out no later than 4 years after the initiative's commencement date, and a final evaluation no later than 4 years after its end.</p>



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PART 9/9

**COMMISSION STAFF WORKING DOCUMENT**

**EXECUTIVE SUMMARY OF THE IMPACT ASSESSMENT REPORT**  
*Accompanying the document*

**Proposal for a Council Regulation establishing the Joint Undertakings under Horizon  
Europe**

**European Partnership on Clean Hydrogen**

{COM(2021) 87 final} - {SEC(2021) 100 final} - {SWD(2021) 37 final}

<b>Executive Summary Sheet (Max 2 pages)</b>
Impact assessment on clean hydrogen
<b>A. Need for action</b>
<b>What is the problem and why is it a problem at EU level?</b>
While hydrogen is a clean fuel, with no emissions, it is still more expensive than other energy sources, and mostly comes from natural gas, generating carbon dioxide (CO <sub>2</sub> ). We need to produce ‘ <b>clean hydrogen</b> ’ from renewable energy resources that would eliminate CO <sub>2</sub> emissions from the process. Clean hydrogen applications are more expensive than competing technologies, and not yet fully reliable or of sufficient quality for uptake. There is also limited large-scale deployment of clean hydrogen generation capacity. European hydrogen industrial and research stakeholders along with the power, transport, and construction industrial stakeholders are most affected.
<b>What should be achieved?</b>
Contribute quantifiably to the achievement of the 2030 climate targets and to climate neutrality by 2050. Strengthen and integrate EU scientific capacity to accelerate the development and improvement of advanced clean hydrogen applications ready for market, across energy, transport, building and industrial end-uses. Strengthen the competitiveness of the EU clean hydrogen value chain (notably SMEs).
<b>What is the value added of action at the EU level (subsidiarity)?</b>
Clean hydrogen has complex and interlinked value chains, which require effective cooperation and inter-sectoral collaboration at European level to enable successful, large-scale demonstration and deployment.
<b>B. Solutions</b>
<b>What are the various options to achieve the objectives? Is there a preferred option or not? If not, why?</b>
The following options were considered as a means to support hydrogen R&I: <ul style="list-style-type: none"> <li>• traditional Horizon Europe calls;</li> <li>• a co-programmed European partnership; or</li> <li>• an institutionalised partnership under Article 187 TFEU.</li> </ul> <p>The institutionalised partnership is the preferred option since it is the best at providing a long-term strategy and commitment from industry as well as from Member States and the European Commission.</p>
<b>What are different stakeholders' views? Who supports which option?</b>
80% of the respondents to the open public consultation suggested that a European institutionalised partnership would have a significant (positive) effect on and be ‘very relevant’ for increasing industrial leadership in hydrogen technologies and the uptake of new technologies.
<b>C. Impacts of the preferred option</b>
<b>What are the benefits of the preferred option (if any, otherwise of main ones)?</b>

<p>The implementation of the clean hydrogen initiative through an institutionalised partnership would best ensure that the private and public sectors remain fully engaged in the development and implementation of a <b>long-term strategy</b> for clean hydrogen RD&amp;I. It is consistent with leveraging industrial financial and in-kind resources, to maximise the impact of Commission funding. It would support the development of a strategy for hydrogen that is fully aligned with the European Green Deal priorities and the European climate commitment.</p>
<p><b>What are the costs of the preferred option (if any, otherwise of main ones)?</b></p>
<p>The annual costs of running an institutionalised partnership based upon the 2018 costs of the existing FCH 2 joint undertaking are €2.9 million (27 staff) plus €2.1 million other direct costs. For the period 2014-2015, the FCH 2 JU has generated €1.63 of total leverage, i.e. €1.63 support by industry for every €1 support of the European Commission.</p>
<p><b>What are the impacts on SMEs and competitiveness?</b></p>
<p>Similar to the calls of the LEIT programme, about 25% of the partners in FCH 2 JU projects are SMEs and half of Hydrogen Europe members are SMEs. The partnership would allow smaller companies, which have developed niche products to serve growing hydrogen markets and to connect with larger industrial players that can support their development.</p>
<p><b>Will there be significant impacts on national budgets and administrations?</b></p>
<p>No particular impact is expected on national budgets or administrations, though an institutionalised partnership would help rejuvenate and harmonise national hydrogen research programmes.</p>
<p><b>Will there be other significant impacts?</b></p>
<p>Additional demonstration projects are likely to generate further public interest in hydrogen. At the same time, increased public outreach and education on hydrogen should create a basis of public support for hydrogen applications. Standards and norms will be more easily addressed at international level, where the EU should have only one voice.</p>
<p><b>Proportionality?</b></p>
<p>The implementation of an institutionalised partnership should ensure that the private and public sectors remain fully engaged in the development and implementation of a <b>long-term strategy</b> for clean hydrogen RD&amp;I. It would leverage industrial financial and in-kind resources, to maximise the impact of Commission funding and support the development of a strategy for hydrogen that is fully aligned with the European Green Deal priorities.</p>
<p><b>D. Follow up</b></p>
<p><b>When will the policy be reviewed?</b></p>
<p>There should be an interim evaluation of the proposed institutionalised partnership 3 years after the start of its operation.</p>