

EN Annex 3

Memorandum of Understanding for the Co-programmed European Partnership for Clean Steel - Low Carbon Steelmaking

The ESTEP aisbl, representing the partners other than the Union (its constituent entities¹), the registered offices of which are in Avenue Cortenbergh 172, 1000 Brussels, Belgium, hereafter referred to as the “Partners other than the Union”, and the European Union, represented by the European Commission, (jointly hereinafter referred to as “the Partners”),

Considering that:

- Parts of Horizon Europe – the Framework Programme for Research and Innovation (‘Horizon Europe’) ² – may be implemented through Co-Programmed European Partnerships, on the basis of a Memorandum of Understanding between Partners determined to support the development and implementation of research and innovation activities of strategic importance to enable the Union to address global challenges and maintain its competitiveness in line with EU priorities, including the Sustainable Development Goals;
- The Strategic Plan for Horizon Europe³ has identified a candidate for a Co-Programmed European Partnership for Clean Steel - Low Carbon Steelmaking considered instrumental to deliver scientific, economic and societal impact in line with the Horizon Europe objectives;
- The proposal received from the Partners other than the Union has been positively assessed by the European Commission in that it fulfils the new ambition and the selection criteria referred to in Article 10 and Annex III of Regulation (EU) 2021/695 of the European Parliament and of the Council⁴ (‘Horizon Europe’);
- The implementation, monitoring and evaluation of the European Partnerships will comply with the criteria referred to in Annex III of Horizon Europe, including an alignment with Horizon Europe monitoring and evaluation provisions, set out in Article 50 and Article 52, as well as Annex V on Key Impact Pathways;

¹ Constituent entities are the members of the Association.

² Regulation (EU) 2021/695 of the European Parliament and of the Council of 28 April 2021 establishing Horizon Europe – the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination (OJ L 170, 12.5.2021, p. 1–68.)

³ <https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/3c6ffd74-8ac3-11eb-b85c-01aa75ed71a1>

⁴ OJ L 170, 12.5.2021, p. 1–68.

- The multi-annual Strategic Research and Innovation Agenda (SRIA) agreed by the Partners will provide the basis for the development of the co-operation under this Memorandum of Understanding, and for defining the annual priorities in line with the Strategic Plan for Horizon Europe;
- Regulation (EU) 2020/852⁵ establishes the general framework for determining whether an economic activity qualifies as environmentally sustainable for the purposes of defining sustainable investments. It creates a common reference that investors, banks, industry and researchers can use when investing in projects and economic activities that have a substantial positive impact on climate and environment and no significant harm on any of them. It is the reference for green investments in the Union;
- Funding sources other than Horizon Europe (other Union programmes as well as external funding sources, including those from Member States, and in particular Research Fund for Coal and Steel) will be explored in order to contribute to the achievement of objectives of the Co-programmed European Partnership in line with Horizon Europe objectives;
- In line with the European Green Deal, the Co-Programmed European Partnership for Clean Steel will develop and demonstrate breakthrough technologies by 2030 leading to a zero-carbon steel making process.
- Pursuant to Article 5 of the Statutes⁶ of ESTEP, the Partners other than the Union engage in the European Partnership for Clean Steel – Low Carbon Steelmaking with the European Commission to promote, facilitate and carry out the research, innovation, demonstration, dissemination and other activities aiming at market, regulatory and societal uptake, including workforce training, necessary to achieve the objectives specified in Section 1 below;
- This Memorandum of Understanding constitutes an agreement in which the Partners will undertake all efforts necessary to achieve the objectives. It is not legally binding and does not, and will not, create any contractual or pre-contractual obligations under any law or legal system. Nothing in this Memorandum of Understanding will be construed as creating any liability, rights, waiver of any rights or obligations for any Partner or as releasing any Partner from its legal obligations. Neither Partner should be liable under this Memorandum of Understanding towards the other Partner;

Have agreed the following:

⁵ Regulation (EU) 2020/852 of the European Parliament and the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (OJ L 198, 22.6.2020, p. 13).

⁶ Article 5 (Members and Observers) of the ESTEP Statutes reads:” The Association is open to European Union stakeholders of the steel industry (companies and associations of the steel value chain, research & technology organisations, universities, etc.) having their registered office within the territory of at least one member state of the European Union.”. The Clean Steel Partnership will openly engage with the broad stakeholder community via the stakeholder forum including in particular organisations from associated countries. In case of a need to modify the ESTEP statutes, it is foreseen to do so along with the obligatory adjustment to comply with the new Belgian company law.

1 Establishment, general, specific and operational objectives

The Co-programmed European Partnership for Clean Steel - Low Carbon Steelmaking, hereinafter referred to as “the Co-programmed European Partnership”, is agreed between the Partners, to be implemented in an open, transparent, efficient and flexible way.

This Memorandum of Understanding sets out a cooperative relationship for the duration of the Co-programmed European Partnership with a long-term common vision, and the Partners pledge to pursue this common vision throughout the duration of this Partnership. It will contribute to the objectives of Horizon Europe, and the Strategic Plan.

The general objectives of the Co-programmed European Partnership are defined as follows:

GO1 Develop climate neutral solutions for the steel production. The transformation of the EU steel industry towards climate neutrality requires the development and deployment of technologies at high technology-readiness-level. The implementation of these technologies enables the steel producers to reduce their CO₂ emissions by 80-95% compared to 1990 levels by 2050, ultimately leading to climate neutrality.

GO2 Preserve the competitiveness and viability of the EU steel industry – both for BF-BOF and EAF routes and including the wider steel value chain – and making sure that EU production will be able to meet the growing EU demand for steel products.

The specific objectives are the following:

SO1 Enabling steel production through carbon direct avoidance (CDA) technologies at a demonstration scale;

SO2 Fostering smart carbon usage (SCU – Carbon capture) technologies in steelmaking routes at a demonstration scale, thus cutting CO₂ emissions from burning fossil fuels (e.g. coal) in the existing steel production routes;

SO3 Developing deployable technologies to improve energy and resource efficiency (SCU - Process Integration);

SO4 Enhancing the recycling of steel and its by-products, thus improving resource efficiency through pathway Circular Economy (CE);

SO5 Demonstrating clean steel breakthrough technologies contributing to climate-neutral steelmaking, in line with the European Green Deal;

SO6 Strengthening the global competitiveness of the EU steel industry in line with the New Industrial Strategy for a globally competitive, green and digital Europe.

The operational objectives are the following (full list is presented in the Clean Steel roadmap):

- a) Achieving TRL 8 by 2030 in at least 12 building blocks funded by the Partnership.
- b) Implementing by 2027 at least two demonstration projects leading to 50% CO₂ emission reduction compared to 1990 levels.
- c) Ensuring the construction by 2030 of at least two demonstrations of a technological pathway (CDA, SCU-Carbon Capture, SCU-Process Integration, Circular Economy) leading to 80% CO₂ emission reduction compared to 1990 levels if the demonstration technology is fully implemented.

General Objectives	Specific Objectives	Operational objectives		KPIs	Objective by 2030		
CLIMATE							
GO 1- Develop climate neutral solutions for the steel production. The transformation of the EU steel industry towards climate neutrality requires the development and deployment of technologies at high technology-readiness-level. The implementation of these technologies enables the steel producers to reduce their CO2 emissions by 80-95% compared to 1990 levels by 2050, ultimately leading to climate neutrality.	SO1 - Enabling steel production	OO1.- Replacing carbon by renewable energy	KPI1	Decrease of scope I and II CO ₂ emissions proven at a demonstration scale	TRL8 > 40% CO ₂ reduction compared with reference operation at TRL 6		
		OO2.- Development of H ₂ -based reduction and/or melting processes	KPI2	a.-Reduction degree of iron oxide b.-Replacement rate of fossil carbon by hydrogen injection c.-Replacement rate of natural gas by H ₂ in the feed of the direct reduction plant	a.-TRL8: > 90 % reduction degree of iron oxides b.-TRL8: > 10 % replacement rate of fossil carbon at the injection point c.-TRL8: > 50 volume-%		
		OO3.-Electrolytic reduction	KPI3	Electric efficiency of the electrolytic cell	TRL8: > 85% electric efficiency		
	SO2- Fostering SCU technologies in steelmaking routes	OO4.-Improving process integration with reduced use of carbon (e.g. gas injection in BF) upstream + downstream	KPI4	Decrease of process-related CO ₂ emissions proven	TRL8: > 25 % reduction compared with reference operation		
		OO5.- Increasing the use of non-fossil carbon	KPI5	Share of non-fossil carbon proven in reducing and/or melting process	TRL8: > 20 % of non-fossil fuels/ reducing agent		
		OO6.-Capturing CO ₂ for CCU and/or CCS	KPI6	CO ₂ capture rate from process/off-gases	TRL8: > 95 % from dedicated gas stream		
		OO7.-Conditioning of metallurgical gases (containing CO, CO, CH ₄ , etc.) to meet specifications to finally produce chemical feedstock/alternative fuels (the "use" part supported by the P4P partnership)	KPI7	Share of the carbon content of the process gas (CO ₂ /CO) provided to be transformed into products	TRL 8: more than 65 % of C		
		OO8.-Increasing the use of pre-reduced iron carriers	KPI8	Share of pre-reduced iron carriers out of total Fe carriers	TRL8: > 20 % pre-reduced Fe carriers in iron and steelmaking process		
		OO9.-Developing technologies to reduce the energy required to produce steel	KPI9	Decrease the use of energy per tonne of steel for clean steel making	TRL8: > 10 % specific energy consumption reduction for a dedicated process		
SO3.- Developing deployable technologies to improve energy and resource efficiency (SCU Process Integration)	CIRCULAR						
	SO4.-Increasing the recycling of steel scrap and residues to increase smart resources usage and further support a circular economy model in the EU	OO10.-Enhancing the recycling and re-use of industrial residues of the steel production process	KPI10	Re-use and recycling of solid residues co-generated during the steel production process and reduction of their landfilling rate	TRL8: internal and external recycling and re-use rate > 85 % (in total)		
		OO11.- Enhancing the recycling of steel scrap	KPI11	Scrap pre-treatment and cleaning technologies and scrap yard management procedures and techniques for: Progressively increasing the uptake of low-quality scrap grades (post-consumer) into high quality steel-grades Progressively replace the use of pre-consumers grades with post-consumer grades Progressively replace the use of solid pig iron with post-consumer grades	TRL8: Low-quality scrap input share over the total scrap input increased by at least 50% or more compared to the usual practice for a specific steel quality		
	GO2.-Developing and deploying technologies aiming at closing the feedstock and energy loops	COMPETITIVENESS					
		SO5.-Demonstrating clean steel breakthrough technologies contributing to climate-neutral steelmaking, in line with the European Green Deal	OO12.-Achieving TRL 8 by 2030 in at least 12 building blocks funded by the Partnership	KPI12	Percentage of projects that reach high TRL	Share of projects with TRL7 in CSP : >85% Share of projects with TRL8 in CSP: >75%	
			OO13.-Implementing by 2027 at least two demonstration projects leading to 50% CO ₂ emission reduction compared to 1990 levels. Ensuring the construction by 2030 of at least two demonstrations of a technological pathway (CDA, SCU-Carbon Capture, SCU-Process Integration, Circular Economy) leading to 80% CO ₂ emission reduction compared to 1990 levels if the demonstration technology is fully implemented.	KPI13	Number of demonstration projects	TRL8: 2 projects > 80% CO ₂ reduction compared with reference operation	
		GO3-Preserve the competitiveness and viability of the EU steel industry – both for BF-BOF and EAF routes and including the wider steel value chain – and making sure that EU production will be able to meet the growing EU demand for steel products.	SO6.- Strengthening the global competitiveness of the EU steel industry in line with the New Industrial Strategy for a globally competitive, green and digital	OO14.-Creating a new market for 'clean steel' products that would benefit from a labelling/certification scheme for clean steel based on a life-cycle assessment approach	KPI14	% of clean steel out of total EU steel demand	Start of the roll-out of clean steel and its products
				OO15.-Contributing to the EU's efforts towards ensuring growth and jobs with long-term stability	KPI15	GVA generated by the steel industry and key steel-supplied value chains	Increase GVA by 2% compared to 2020 (target needs to be revised after COVID19)
				OO16.-Establishing the EU steel industry as a leader in low-carbon steel and ensuring standardisation and global market uptake of successful technologies developed in the EU	KPI16	Global market share of EU technology providers	+10% in global market share of EU technology providers
OO17.- Fostering R&D collaboration between EU companies and science in the clean steel value chains				KPI 17	a.-Number of visiting periods of external researchers working on projects funded by the Partnership b.-Number of calls in collaboration with other Partnerships	a.- > 10 visiting periods (CDA, SCU, CE) b.- > =5 linked or joined calls	
OO18.-Upskilling steel workforce -Training of the steel plants workforce on the new technologies for low CO ₂ steelmaking and high level automation	KPI18			Number of supporting dedicated programmes (EU, national), with which the Partnership operates in synergy	>= 3 dedicated supporting programmes		

2 Contributions and activities by the Partners

Any Union contribution, provided through the Horizon Europe Framework Programme to the Co-programmed European Partnership, will be used to fund research and innovation activities, implemented as indirect actions following open calls for proposals and contests. These activities will be subject to the Horizon Europe Rules for Participation and Dissemination.

The Research and innovation activities to be funded by the Union contribution, implemented with actions under the *Research Fund for Coal and Steel (RFCS)* in the scope of the Co-programmed European Partnership, will be subject to the RFCS legal basis.

The European Commission envisages to dedicate up to EUR 700 million to actions within the scope of the Co-programmed European Partnership⁷.

The Partners other than the Union will provide input and advice to the European Commission in order to contribute to the identification of priorities of research and innovation activities and the definition of call topics to be included in the Horizon Europe Work Programmes and of the Research Fund for Coal and Steel (RFCS) **within the scope of the Co-programmed European Partnership’s activities**.

Furthermore, **the Partners other than the Union envisage⁸ to dedicate contributions of the equivalent of up to EUR 1000 million⁹** for the period 2021 - 2030¹⁰ in research, innovation and other activities in the area of the Co-programmed European Partnership, engaging their constituent and affiliated entities¹¹ to make such investments. These contributions will complement the Union contribution and will at least match the Union contribution.

Contributions by the Partners other than the Union^{12 13 14} will take the form of (see further details in section 5):

⁷ The maximum Union contribution may be increased in duly justified cases (e.g. with contributions to Horizon Europe from third countries if available) and when agreed by the Partners and matched by contributions from the Partners other than the Union.

⁸ The undertaking and contribution by the Association covers only the in-kind contributions to be provided by its constituent entities and their affiliated entities (and not any contributions to be provided by its non-constituent entities or by a non-affiliated entity).

⁹ The private contribution was announced to President Juncker in a letter from the EUROFER Vice-Presidents in September 2019. And in reality the private contribution is envisaged to be appreciably higher thanks to projects submitted to the Innovation Fund and other instruments on national and EU level, which support the transition towards climate neutral steelmaking.

¹⁰ The longer timeline for contributions from Partners other than the Union takes into account the fact that that the contributions will materialise over a longer period.

¹¹ Entities are affiliated when they have a link with the beneficiary, in particular a legal or capital link, which is neither limited to the action nor established for the sole purpose of its implementation, in accordance with Article 187(1) of the Regulation (EU, Euratom) 2018/1046 of the European Parliament and of the Council of 18 July 2018 on the financial rules applicable to the general budget of the Union

¹² In line with Annex III of Horizon Europe and referred as co-investment in Annex V of Horizon Europe.

¹³ Where applicable, funding from state resources must be compliant with State aid rules.

¹⁴ The European Partnership may consider the ‘Do No Significant Harm Principle’ pursuant to Article 17 of Regulation (EU) 2020/852 and take into account the provisions of that Regulation to improve access to sustainable finance, where relevant.

- a. **In-kind contributions to the Actions funded by the Union**, consisting of eligible costs in accordance with the Horizon Europe rules minus the Union contribution;
- b. **In-kind contributions to Additional Activities** that are in the scope of the Strategic Research and Innovation Agenda (SRIA) and addressed in the annual Additional Activities Plan, which is approved by the Partnership Board. In-kind Additional activities are those activities which contribute to achieving the objectives of the Co-programmed European Partnership, including R&I at higher Technology Readiness Level (TRL) and/or to ensure demonstration, market, regulatory and societal uptake, which are in the scope of the SRIA but are not covered by Union funding;

For the in-kind contributions generated in Actions with lower funding rates than the maximum funding rates under Horizon Europe, the funding rate will be defined individually per call topic in the Horizon Europe Work Programme. This will range from the standard funding rate for R&I actions, to reduced funding rates for certain R&I actions and for Innovation actions in line with Article 34 of Horizon Europe. The selection of topics with reduced funding rates will be discussed in the Partnership Board.

In addition the Partners other than the Union intend to make **Investments in operational activities** that go beyond the work foreseen in the SRIA, that contribute to achieving the objectives of the Co-programmed European Partnership and where there is a clear link between the investment and the activities of the Co-programmed European Partnership (e.g. investments in building production facilities, in training programmes for workers potentially upscaled thanks to the European Social Fund Plus (ESF+), and in other activities required for producing and putting on the market the product/service resulting from the R&I performed as part of the Co-programmed European Partnership). These Investments in operational activities are however not included in the abovementioned contributions intended by the Partners other than the Union, but they should be taken into account as leverage.

3 Governance

The Partners should convene in the form of a Partnership Board as the main forum for dialogue and steering to reach the objectives set out in this Memorandum of Understanding. Through the Partnership Board, the representatives of the Partners should agree on all issues concerning the cooperation for the Co-programmed European Partnership. The Partners through their participating representatives are considered as ‘Members’ of the Partnership Board.

The Partners agree on the composition and size of the Partnership Board, while respecting the following principles:

- Adequate representation of the European Commission services, including through acting as co-chair when meeting in the format of the Partnership Board;

- Adequate representation of SMEs;
- Adequate gender balance;
- Adequate geographical coverage;
- Balanced representation of the different EU steel production routes and adequate experience of the relevant decarbonisation challenges.

Participation in the Partnership Board may be on a rotating basis, except for the representatives of the European Commission.

In addition, the Partnership Board may agree to invite, or nominate as observers to its meetings representatives of other European Partnerships, civil society organisations, standardisation bodies, certification bodies, regulators, public procurers as well as experts in the area of the Co-programmed European Partnership.

The Partnership Board will be co-chaired by the European Commission, represented by the lead service in charge of the Co-programmed European Partnership, and a co-chair from the Partners other than the Union, selected among their members nominated to the Partnership Board.

The Partnership Board may lay down its Rules of Procedure, based on a harmonised proposal provided by the European Commission, covering inter alia rules on confidentiality, transparency and avoidance of conflicts of interests.

In order to address strategic issues, the Partners may also convene at a higher level¹⁵ to review the work of the Partnership Board, take stock of the progress by the Co-programmed European Partnership in achieving its objectives, adjust priorities and activities according to changing market or policy needs or based on results from monitoring and evaluation activities, and discuss further ways to enhance collaboration between European Partnerships and synergies with other Programmes. The implementation of results and proposals from such high-level meetings may be subject to approval by the Partnership Board.

A Stakeholder Forum will advise on the priorities to be addressed, in line with the Strategic Research and Innovation Agenda and the Horizon Europe strategic planning, and suggest, in view of the progress of the Co-programmed European Partnership, adjustments or re-orientations to the Partnership Board, where necessary.

This Stakeholder Forum will include all relevant stakeholders that are not members of the Partnership and may contribute to the successful implementation of the Partnership. The Forum will be opened, among others, to stakeholders representing the civil society as well Member States and regional authorities in order to ensure coherence and synergies with national and regional R&I efforts. Non-technical experts from reputable research institutes may also be included. The Implementation Group, representing the private side of the partnership, will interact with the Stakeholder Forum in order to make sure that the Clean Steel Partnership will generate social and environmental impacts going beyond the steel industry and benefitting the EU as a whole. The Stakeholder Forum will play a central role to provide feedback on potential

¹⁵ For example, between the President of the Association and a Director-General from the European Commission.

revisions to the multiannual Roadmap. In fact, to ensure an open and transparent approach, the preparation of the Roadmap as well as any major revisions of the document will undergo a public consultation process.

The Partnership Board convenes the meetings of the Stakeholder Forum.

The Partnership Board may form a States Representatives Group. The Partnership Board may ask each Member State and each Associated Country to nominate a representative to the States Representatives Group. The States Representatives Group may elect a chairperson from among its members.

The States Representatives Group should advise and actively support the achievement of objectives of the Co-programmed European Partnership and ensure complementarity with national policies, priorities and programmes. They may review information and provide opinions on the progress of the Co-programmed European Partnership towards its scientific, economic and/or societal impacts.

The States Representatives Group may provide information to, and act as an interface with the Co-programmed European Partnership on the following matters:

- a) The status of activities performed under national or regional policies, priorities and research and innovation programmes which are relevant to the Co-programmed European Partnership and identification of potential areas of cooperation, including concrete actions taken or envisaged for the deployment of relevant technologies and innovative solutions at the national or regional level;
- b) Specific measures taken at national level or regional level to maximise the impacts of the results achieved, in particular dissemination events, dedicated technical workshops and communication activities;
- c) Specific measures taken at national or regional level to support the exploitation, deployment and/or scale-up of the results achieved within the Co-programmed European Partnership.

The States Representatives Group may also make proposals to the Partnership Board on the above matters.

The Partnership Board convenes the meetings of the States Representatives Group.

The Partners other than the Union may arrange their own governance structures, providing that these do not contradict this Memorandum of Understanding. They may invite a European Commission representative as observer to meetings of their governance structure on subjects related to the Co-programmed European Partnership. The European Commission services may participate as observers to meetings of technical groups set up by the Partners other than the Union that are relevant for the Co-programmed European Partnership.

4 Activities and commitments of the European Commission

The European Commission undertakes to duly take into account the input and advice from the Partners other than the Union when identifying and defining call topics for research and innovation activities in the scope of and linked to the Clean Steel Partnership to be included in the Horizon Europe Work Programmes and the Research Fund for Coal and Steel (RFCS). For this purpose, the European Commission undertakes to consult and maintain a regular dialogue with the Partners other than the Union during the preparation of the Work Programmes. The call topics will be subject to Horizon Europe comitology procedures and the RFCS legal basis where appropriate.

The European Commission may support and contribute to the regular monitoring of the Co-programmed European Partnership, including through its participation in the Partnership Board and in other activities, in line with the Horizon Europe monitoring provisions (Article 50). The European Commission shall also carry out in a timely manner the interim and final evaluation of the Co-programmed European Partnership feeding into Horizon Europe evaluations, as specified in Article 52 of Horizon Europe. These evaluations will inter alia be fed by a self-assessment provided by the Partners other than the Union on the achievement of objectives and how their commitments have been fulfilled and contributions made throughout the lifecycle of the Co-programmed European Partnership.

The evaluations will examine how the Co-programmed European Partnership fulfils its mission and objectives, cover all its activities and evaluate its European added value, effectiveness, efficiency, including its openness and transparency, the relevance of the activities pursued and their coherence and/or complementarity with relevant regional, national and Union policies, including synergies with other parts of Horizon Europe (such as missions¹⁶, clusters or thematic/specific programmes). The evaluations will take into account the views of stakeholders, at both European and national level. The evaluations will include, where relevant, an assessment of the most effective policy intervention mode for any future action, as well as the relevance of any possible renewal of the Co-programmed European Partnership given the overall policy priorities and the research and innovation support landscape, including the coherence and positioning against other initiatives supported through the Framework Programme, in particular European Partnerships or missions.

5 Activities and commitments of the Partners other than the Union

5.1 Activities

The Partners other than the Union undertake to provide inputs and advice to the European Commission in order to achieve the objectives of the Co-programmed European Partnership. In particular, they may provide input and advice to the European Commission in order to contribute to the identification of priorities of research and innovation activities and the definition of call topics to be included in the Horizon Europe Work Programmes and of the Research Fund for

¹⁶ Should missions be confirmed. Hereinafter, missions are mentioned under the condition that they are confirmed.

Coal and Steel, in view of financial support for indirect actions following calls for proposals and contests. This is without prejudice to the outcome of the Horizon Europe and RFCS comitology procedures.

The Partners other than the Union also undertake to make the following In-kind Additional Activities and Investments in operational activities in support of the objectives set out in Section 1 of this Memorandum of Understanding:

- a) Scope of In-kind Additional Activities. In-kind Additional Activities may include:
 - i. further exploitation/activities within the research chain of low carbon steelmaking either at higher TRLs or in parallel strands of activity (including among others the depreciation not covered by CSP projects)
 - ii. improvement of existing production lines for up-scaling of promising low CO₂ emission steelmaking technologies
 - iii. synergies among actors of the EU steel sector, in particular steel producers, technology providers and academia. By engaging a large number of public and private stakeholders, the Partnership aims to establish an integrated approach, from research to demonstration of potential technologies to decarbonise the steel industry, within a single Roadmap. This approach will reduce overlaps in R&D&I efforts and funding, ensuring better synergies and larger impacts.
 - iv. societal uptake is very important to successfully transform the EU steel sector to low CO₂ emission steelmaking based on drastically changed production plants
 - v. regulatory measures in particular for new low CO₂ emission technologies at national and EU level
 - vi. proof of concept of promising new low CO₂ steelmaking technologies to foster the follow-up
 - vii. awareness-raising activities on technologies (link to societal uptake) and safety measures in particular for the new production technologies using hydrogen
 - viii. national projects (private side contribution) in scope of the SRIA of CSP
 - ix. provide input and advice concerning policy and regulatory barriers that hamper the achievement of objectives of this Co-programmed European Partnership

- b) Scope of Investments in operational activities. Investments in operational activities may include:
 - i. Operational Activities. Testing the breakthrough technologies at high TRL requires significant effort from the steel producers. For instance, processing high volumes of hydrogen requires a modification of the gas infrastructure. The change might negatively impact the productivity of these steel sites. The Partnership would therefore need to take into consideration this type of efforts borne by the steel producers, i.e. additional operating costs, as an in-kind contribution from their side. In addition, and most importantly, the investment for the demonstrators up to TRL 8 will be coordinated by the steel producers. The Clean Steel

Partnership will compensate with depreciation rates during the project implementation.

- ii. Facilities and buildings for the breakthrough low CO₂ emission technologies and supporting facilities (e.g. Hydrogen infrastructure).
- iii. Training of the steel plants workforce on the new technologies for low CO₂ steelmaking and high level automation.
- iv. Marketing products from R&I. As regards customers (downstream), R&D&I investment in the steel sector will lead to the production of a cleaner, high-quality steel, which in turn will stimulate the production of goods with lower lifecycle impacts. Indeed, steel is considered a mitigation enabler for many other sectors.
- v. Staffing of the Clean Steel partnership private office.
- vi. National projects on low CO₂ emission steelmaking (private side contribution).

The planning and reporting of In-kind Additional Activities and Investments in operational activities will respect confidentiality requirements.

5.2 Openness and transparency

An appropriate level of openness is necessary to achieve the objectives of the Co-programmed European Partnership. Thus, the Partners other than the Union undertake to put in place measures that ensure:

- a) An open and transparent process for consulting their constituent entities and other relevant stakeholders as well as Member States and Associated Countries on the identification of the priorities of the Co-programmed European Partnership and the design of its activities, which results in an appropriate involvement of all relevant stakeholders;
- b) A governance structure that results in a high level of openness and transparency, including publishing information on the functioning of the Co-programmed European Partnership (composition of partnership structures, decisions made by the Partnership Board etc.);
- c) A growing participation in and contribution to the Co-programmed European Partnership, supported by an open policy to membership in the Association and an appropriate level of information and, if necessary, assistance to all constituent entities of the Partners other than the Union.

In particular, the Partners other than the Union undertake to ensure that the In-kind Additional Activities that they contribute are, to the extent possible, open for participation to non-members of the Co-programmed European Partnership (e.g. dissemination and exploitation activities, etc.) from EU & associated countries and based on equal treatment.

Also, the Partners other than the Union undertake to put in place appropriate measures for informing SMEs, civil society and other relevant stakeholders about the Co-programmed European Partnership and promoting their participation.

5.3 Dissemination and communication

The Partners undertake to communicate and disseminate their activities and results broadly and through various channels, in order to ensure that any necessary information in the area of the Co-programmed European Partnership is available to all possible stakeholders, all along its duration. The Partners undertake to engage in information, communication, publicity and dissemination and exploitation activities of the Co-programmed European Partnership by applying mutatis mutandis Article 51 of Horizon Europe.

This communication and dissemination will also ensure that the EU support to the Co-programmed European Partnership is visible.

5.4 Coherence and coordination with other European Partnerships and beyond

The Partners undertake to set up and maintain a clear strategy and plan for the interfaces and joint activities of the Co-programmed European Partnership with the other relevant European Partnerships, as well as with the broader European research and innovation system and communities.

The Partners other than the Union will establish a formal and regular collaboration with the following other European Partnerships:

- a) European Partnership Processes4Planet
- b) European Partnership Clean Hydrogen
- c) The Partners other than the Union will furthermore regularly assess the need for further collaboration with other European partnerships.

The SRIA sets out further details, as appropriate, on coherence and collaboration with other European Partnerships, synergies with other Union programmes, Union bodies and national, international, and intergovernmental programmes and policies, and the relevant parts of Horizon Europe (including missions).

The Partners other than the Union will report specifically on their collaboration with other European Partnerships in their annual reporting.

5.5 Fulfilment of commitments

The Partners other than the Union undertake to put in place measures that ensure that the contributions agreed are provided in full, and on time.

The Partnership Board may monitor, throughout the life of the Co-programmed European Partnership, the contributions reported by the Partners.

If the contribution by the Partners other than the Union is significantly lower than the overall estimation agreed in the Annual Additional Activities Plan, the Partnership Board may make recommendations to the Partners other than the Union on adjustment measures.

If the action taken is not sufficient to reach the contribution originally agreed, the Partnership Board may recommend the European Commission to adjust its own contribution to match the contribution *de facto* made by the Partners other than the Union.

6 Monitoring and reporting

The activities of the Co-programmed European Partnership will be subject to continuous monitoring and periodic reporting in accordance with Article 50, Annex III and Annex V of Horizon Europe. The outcomes of monitoring and reporting will feed into the evaluations of the Co-Programmed European Partnerships as part of Horizon Europe evaluations. It will feed into the biennial monitoring of the European partnerships in the context of the Strategic Coordinating Process.

The continuous monitoring and periodic reporting by the Partners will be carried out at least annually for the duration of the Memorandum of Understanding. There will be a simplified reporting over one year and a full reporting every second year.

The full reporting, every second year, should cover all points listed below (a-e). The simplified reporting, every one year, should focus on elements where data can be extracted from the Commission or other databases, for points a to c.

The periodic reporting from Partners other than the Union will include:

- a) The progress of the Co-programmed European Partnership towards its objectives (based on the Key Performance Indicators (KPI)) and the expected scientific, economic and societal impacts (following the Horizon Europe Key Impact Pathways). This reporting should also contain a qualitative assessment of the KPI for the past year.
- b) Information on the functioning of the Co-programmed European Partnership, including on openness, transparency, collaboration and synergies with other European Partnerships and initiatives, etc. in line with the implementation criteria for European Partnerships.
- c) Agreed and actually provided contributions.
- d) Investments in operational activities undertaken by the Partners other than the Union, and leverage including additional public and private investment mobilised to exploit or scale-up partnership results.
- e) Structured and representative “impact case studies”¹⁷ that will be used to highlight lessons learned from specific projects/activities, their drivers and barriers to impact, and their possible follow-up with the appropriate instruments, including other forms of support outside the Co-programmed European Partnership, such as training and skills development.

¹⁷ i.e. high potential project outcomes that can be fast-tracked towards further investment and rapid development.

The monitoring and reporting will be done on the basis of evidence provided by Partners, respecting confidentiality of information and avoiding anti-competitive behaviour. To the extent possible, Partners will provide monitoring data in close to real-time following Horizon Europe, in particular management and implementation data. To the extent possible, the indicators and methodologies used to monitor the progress of the Partnership towards its objectives and scientific, economic and societal impacts should be harmonised and aligned with the monitoring framework of Horizon Europe (Key Impact Pathways), and the monitoring criteria of European Partnerships.

With due regard to their respective competencies, institutional settings and operational frameworks, the Partners may regularly inform and consult each other on the results of the monitoring, including to assess the contributions of the In-kind Additional Activities and Investments in operational activities undertaken by the Partners other than the Union.

The monitoring and reporting should allow for an assessment over time of their results and progress towards impacts, their visibility and positioning in the international context, and potential needs for adjustment measures.

Upon request, the Partners other than the Union engage to provide the European Commission with additional necessary information for the assessment of the achievements of the Co-programmed European Partnership in the context of the overall Horizon Europe evaluation, respecting confidentiality of information, and in the context of the Strategic Coordinating Process for European Partnerships (e.g. input to the biennial monitoring of the European Partnerships).

6.1 General systems

The Partners undertake to set up and implement an effective reporting and monitoring system that allows the Co-programmed European Partnership as well as the European Commission to track progress over time towards the stated objectives and impacts, as well as to provide implementation and management data.

The information provided should include, among others:

- a) Detailed information on the calls for proposals in the Horizon Europe Work Programme and the Research Fund for Coal and Steel, the proposals received, the grants resulting from these calls, the beneficiaries and participants, the results achieved by individual projects and their overall progress towards impact, or any other information deemed necessary for developing, implementing, monitoring and evaluating Union policies or programmes. Such access to information is limited to non-commercial and non-competitive use and will comply with applicable confidentiality rules. The primary means of collecting information will be through European Commission's reporting systems for management of the Horizon Europe programme;
- b) Activities and fulfilment of contributions by the Partners other than the Union, progress towards objectives, deliverables and KPIs, visibility and positioning in the international

context, the results, impacts and leverage. The primary means of collecting information will be through annual and biennial¹⁸ reporting by the Partners other than the Union and through European Commission's reporting systems for management of the Horizon Europe programme. Information collection will be based on a common methodology specified by the Commission services in consultation with the Partners other than the Union.

6.2 Reporting method for In-Kind Contributions to Additional Activities and Leverage

There are three categories related to contributions and activities that Partners other than the Union will be reporting on:

- a) In-kind contributions to the Actions funded by the Union¹⁹. At the level of the projects, reporting will be done continuously through European Commission's reporting systems for management of the Horizon Europe programme;
- b) In-kind contributions to the additional activities, foreseen in the Additional Activities Plan. At the level of the partnership, reporting will be done annually by the Partners other than the Union and continuously through European Commission's reporting systems for management of the Horizon Europe programme²⁰;
- c) Investments in operational activities foreseen beyond the SRIA, and leverage including other investment mobilised to exploit or scale-up partnership results. At the level of the partnership, reporting will be done biennially²¹ by the Partners other than the Union and continuously through European Commission's reporting systems for management of the Horizon Europe programme²².

The value of the in-kind contributions reported by the Partners other than the Union will be calculated on the basis of a common methodology in line with Annex V of Horizon Europe. The Partners may keep an anonymised record of these contributions from its constituent entities, which provides the basis for periodic reporting of the total value by the Partners other than the Union of in-kind contributions to the partnership's activities.

¹⁸ i.e. once every two years.

¹⁹ Contributions from beneficiaries that are not members or affiliates of the partners other than the Union cannot be considered as a contribution from partners but these will be considered as part of quantitative leverage effect.

²⁰ For example, project reporting will include fields about 'Further investment mobilised to exploit or scale-up project' that could be used for the partnership-level reporting.

²¹ i.e. once every two years.

²² For example, project reporting will include fields about 'Further investment mobilised to exploit or scale-up project' that could be used for the partnership-level reporting.

6.3 Key Performance Indicators (KPIs)

The following Key Performance Indicators are defined for the Co-programmed European Partnership and will be included in monitoring and reporting.

Climate neutral steelmaking

- a) Demonstrating clean steel breakthrough technologies by 2030 that enable the reduction of GHG emission of at least 50% / 80% compared to 1990 levels for similar plants
- b) Achieving TRL 8 by 2030 in most of the technology building blocks funded by the Partnership
- c) 80% to 95% total CO₂ emission reduction potential demonstrated through R&I projects at TRL 7 and TRL8 (remark: the CO₂ emission reduction potential of each single project cannot be summed up when calculating the total CO₂ emission reduction potential)

Competitiveness of the EU steel sector

- d) Establishing the EU steel industry as a leader in low-carbon steel and ensuring standardisation and global market uptake of successful technologies developed in the EU
- e) Impact on SMEs through CSP projects and activities
- f) Leverage factor at least 5
- g) Fostering R&D collaboration between EU companies and science in the clean steel value chains

- h) Key management and implementation data related to the operations and functioning of the Partnership:
 - i. SMEs participation, geographical representation, number of calls & proposals, budget allocation,

The SRIA sets out further details, as appropriate, on the monitoring framework for the Co-programmed European Partnership.

7 Application of this Memorandum of Understanding

Any issues related to the interpretation and implementation of this Memorandum of Understanding may be decided upon in consultation by the Partners in the Partnership Board. In case of ultimate disagreement, any of the Partners may request an early end of the Memorandum of Understanding.

Adaptations to this Memorandum of Understanding may be requested by any of the Partners by registered letter.

8 Duration and Review

The starting date for the Partnership is [*insert date of signature*] and its end date is 31.12.2030. The last calls for proposals can be launched up until 31.12.2027, so the last three years of the partnership should be used to conclude remaining activities.

Any of the Partners may communicate by a registered letter at any time the motivated intention to end this Memorandum of Understanding. In the absence of renewal, appropriate measures may be taken to ensure phasing-out of Framework Programme funding according to the conditions and timeline agreed with the Partners ex-ante, without prejudice to possible continued transnational funding by national or other Union programmes, and without prejudice to private investment and on-going projects. This phasing-out plan may be prepared by the Partnership Board before the interim evaluation of Horizon Europe.

The periodic monitoring and reporting will inform the interim and final evaluations of Horizon Europe evaluations referred to in Article 52 of Horizon Europe. The evaluations will be taken into consideration in the phasing out or possible renewal of the partnership.

On the basis of these reviews and the evaluations, any of the Partners may propose adaptations to this Memorandum of Understanding, or decide for it to be ended.

Done in duplicate at ... on XX.XX.202X,

FOR THE EUROPEAN COMMISSION	FOR THE ESTEP AISBL