



# **Research Fund for Coal and Steel (RFCS)**

## Call for proposals

RFCS-2024-CSP-Big tickets for Steel

(RFCS-2024-CSP)

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## EUROPEAN RESEARCH EXECUTIVE AGENCY (REA)

REA.B – Green Europe  
**B.1 – Future Low Emission Industries**

### CALL FOR PROPOSALS

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## 0. Introduction

This is a call for proposals for EU action grants in the field of Steel under the **Research Fund for Coal and Steel (RFCS)**.

The regulatory framework for this EU Funding Programme is set out in:

- Regulation 2018/1046 ([EU Financial Regulation](#))
- the basic act (RFCS Decision [2008/376](#)<sup>1</sup>).

The call is launched in accordance with the 2024 Work Programme<sup>2</sup> and will be managed by the **European Research Executive Agency (REA)** ('Agency').

The call covers the following **topics**:

- **RFCS-2024-CSP — RFCS-2024-CSP-Big Tickets for Steel**

We invite you to read the **call documentation** carefully, and in particular this Call Document, the Model Grant Agreement, the [EU Funding & Tenders Portal Online Manual](#) and the [EU Grants AGA — Annotated Grant Agreement](#).

These documents provide clarifications and answers to questions you may have when preparing your application:

- the [Call Document](#) outlines the:
  - background, objectives, scope, activities that can be funded and the expected results (sections 1 and 2)
  - timetable and available budget (sections 3 and 4)
  - admissibility and eligibility conditions (including mandatory documents; sections 5 and 6)
  - criteria for financial and operational capacity and exclusion (section 7)
  - evaluation and award procedure (section 8)
  - award criteria (section 9)
  - legal and financial set-up of the Grant Agreements (section 10)
  - how to submit an application (section 11)
- the [Online Manual](#) outlines the:
  - procedures to register and submit proposals online via the EU Funding & Tenders Portal ('Portal')
  - recommendations for the preparation of the application
- the [AGA — Annotated Grant Agreement](#) contains:
  - detailed annotations on all the provisions in the Grant Agreement you will have to sign in order to obtain the grant (*including cost eligibility, payment schedule, accessory obligations, etc*).

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<sup>1</sup> [Council Decision of 29 April 2008 2008/376/EC](#) amended by the [Council Decision \(EU\) 2017/955 of 29 May 2017](#) and [Council Decision \(EU\) 2021/1094 of 28 June 2021](#) (OJ L 130, 20.5.2008, p. 7).

<sup>2</sup> Commission Implementing Decision C(2024)386 concerning the adoption of the work programme for 2024 and the financing decision for the implementation of the RFCS programme.

You are also encouraged to visit the [Funding & Tenders Portal](#) (Projects & Results section) to consult the list of projects funded previously.

## 1. Background

### RFCS policy objectives

The European Green Deal (EGD) Communication<sup>3</sup> of the European Commission is the growth strategy that aims to transform the European Union (EU) into an equal-opportunity and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and in which economic growth is decoupled from resource use. It is supported by the 'Fit for 55'<sup>4</sup> set of legislative proposals and amendments to existing EU legislation, which will help cut the EU's net greenhouse gas emissions by at least 55% by 2030 compared to the levels of 1990 and accelerate the goal of climate neutrality. The EGD Communication also states that all EU actions and policies should work towards the goal of enabling the EU to achieve a successful and just transition towards a sustainable future.

The RFCS legislation amendment package<sup>1</sup> adopted on 19 July 2021 is in line with the European Commission's objectives by enabling the research fund to tackle the sectors' climate and environmental challenges and to assist the EU's coal and steel industries to reduce their emissions, thus contributing to the EGD's goals and achieving a Just Transition towards a climate neutral economy.

To strengthen the commitment for a climate neutral future, the policy context has evolved rapidly in the last couple of years. On 18 May 2022 the Commission presented the REPowerEU<sup>5</sup>, a plan to rapidly reduce the dependence on Russian fossil fuels and fast forward the green transition. The REPowerEU plan highlights that around 30% of the primary steel production in the EU is expected to be decarbonised by 2030 using renewable hydrogen. On 21 February 2023 the Council formally adopted an amending regulation to include REPowerEU chapters in the Recovery and Resilience Facility. Furthermore, to support the electricity side and address the effects of the energy prices crisis, on 14 September 2022, the Commission proposed the Emergency intervention to reduce electricity bills, notably by reducing electricity demand by 5% during peak hours, as a way to reduce gas use for power generation.

In early 2023, two additional pieces of legislation have been proposed by the Commission: the Net Zero Industry Act (NZIA)<sup>6</sup> and the Critical Raw Materials Act (CRMA)<sup>7</sup>.

The NZIA legislation has the duty to help scale up net-zero technologies manufacturing in the EU to provide at least 40% of the EU's annual deployment needs for strategic net-zero technologies by 2030. The clean technologies covered by the NZIA, which include not only commercially available equipment, but also those soon to come into the market, need steel products, in many cases with specific characteristics, to support their deployment. Furthermore, the deployment of these technologies (especially hydrogen and renewable energy) is also key to decarbonise the steel production process itself.

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<sup>3</sup> [European Green Deal](#)

<sup>4</sup> ['Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality COM/2021/550 final](#)

<sup>5</sup> [REPowerEU](#)

<sup>6</sup> [Net Zero Industry Act](#)

<sup>7</sup> [Critical Raw Materials Act](#)

Finally, the CRMA, which tackles the problem related to the dependence of Europe on critical raw materials and the consequent level of vulnerability of EU supply chain, will help to ensure that Europe will have sufficient access to those materials, like rare earths and precious metals, which are vital for manufacturing key technologies for the green transition. EU research and innovation (R&I) is key in order that net-zero technologies will use fewer resources, are more circular in their use of critical raw materials by developing innovative solutions for their recycling, substitution and reuse of critical raw materials. In this context, the circularity of steel and the recovery of rare earths and elements other than iron can be very important.

The Research Fund for Coal and Steel complements the activities carried out in the Member States and within the existing Union Framework Programme for research, technological development, and demonstration activities. Therefore, the European Commission encourages complementarity and sequencing among research programmes and supports the exchange of information between the RFCS Programme and projects financed under national and other European financial instruments for research and innovation, including Horizon Europe, cohesion policy funds (in particular (ERDF)<sup>8</sup> and Just Transition Fund (JTF)<sup>9</sup>), the Innovation Fund and LIFE.

The RFCS Research Programme (Council Decision 2021/1094)<sup>1</sup> has the following research objectives for the Steel sector:

- New, sustainable and low-carbon steelmaking and finishing processes (Art. 8).
- Advanced steel grades and applications (Art. 9).
- Conservation of resources, protection of the environment and circular economy (Art. 10).
- Management of work force and working conditions (Art. 10a).

A link to each of these programme's objectives is outlined under each individual call objective, in the related section.

## **2. Objectives — Themes and priorities — Activities that can be funded — Expected impact**

### **RFCS-2024-CSP - RFCS-2024-CSP-Big Tickets for Steel**

#### Objectives

This topic focuses on the following objectives:

#### **1. Cross cutting issues: digitalisation, skills and social innovation**

Proposals addressing this call objective 1 must also address one of the other objectives 2, 3, 4, 5 or 6 described below. Thus, the implementation of this call objective 1 must happen under one of the following call objectives 2 to 6.

This objective tackles Art. 10a of the RFCS Decision 2021/1094<sup>1</sup>, indicating that proposals are expected to demonstrate digitalization technologies and approaches (including modelling development and improvement) and support developing and

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<sup>8</sup> [Regulation \(EU\) 2021/1058 of the European Parliament and of the Council of 24 June 2021 on the European Regional Development Fund and on the Cohesion Fund](#)

<sup>9</sup> [Regulation \(EU\) 2021/1056 of the European Parliament and of the Council of 24 June 2021 establishing the Just Transition Fund](#)

disseminating competencies to keep pace with new near-zero-carbon steel production processes and to reflect the principle of lifelong learning.

Proposals shall address at least one of the following areas, jointly with the requests specified under one of the call objectives 2, 3, 4, 5 or 6.

- 1.1. Further development of standardised sets of data for the evaluation of environmental footprint as a whole, together with methods and tools applied to measure and demonstrate the improvement of energy efficiency and greenhouse gases (GHG) emissions reductions, including Life Cycle Assessment and Life Cycle Cost Analysis (LCA/LCCA).
- 1.2. Digital solutions (such as but not limited to sensor systems and model algorithms) to support life cycle impact assessment for continuously monitoring the effects of circular approaches / solutions on the society and the environment (CO<sub>2</sub> emissions and pollutants).
- 1.3. New and adapted digital methodologies and tools development, application and demonstration to plan, schedule, monitor, control, and analyse, etc. new material and residues, as well as processes in the steel manufacturing industry.
- 1.4. Use of smart and soft sensors to be integrated into the network of the manufacturing chain for improving monitoring, control and management of stable processing in carbon-neutral steel production. Datasets coming from sensors, process monitoring and control are aimed at raising the digitalisation potential of new steel production technologies through the improvement of data quality using innovative approaches, such as hybrid methods.
- 1.5. Optimization of energy (resource) usage by developing and implementing in-line digital twins of plants including auxiliary devices and services.
- 1.6. Setting up of improved environmental and working conditions for a more favourable sentiment against carbon-neutral steel production and its impact.
- 1.7. Demonstrate the value of an integrated strategy relying on skills monitoring and assessment, with consequent adequate training for new technological solution (including workplace impact concerning e.g. digitalisation, safety, etc.) and shared infrastructures (e.g. H<sub>2</sub> production and piping) in a cross-sectorial industrial frame and/or in a circular economy scenario.

## **2. CO<sub>2</sub> neutral iron ore reduction (Increasing the use of pre-reduced iron carriers)**

Under this call objective, in line with Art.8 of the RFCS Decision 2021/1094<sup>1</sup>, proposals are expected to improve and prove, via research coupled with technology demonstration, near-zero-carbon steel-making processes that contribute to a sustainable economy with a view at enhancing product quality and increasing productivity. In line with Art. 9 of the same Decision, research and technological development shall focus on meeting the requests of steel users to develop new near-zero-carbon steel products and on creating new market opportunities while reducing emissions and environmental impacts. The approach followed should look, with a system perspective, into different innovative approaches for substantially lowering the environmental impact of steel manufacturing, while also being energy efficient, addressing high-quality products and conserving resources.

Proposals addressing this objective should cover at least two of the following areas:



- 2.1. Demonstrate conversion of iron oxide to crude steel by reduction using green H<sub>2</sub>, if possible also by adapting existing hardware. Technologies under this point can also include advancing and validating hydrogen direct reduction (H-DR) technologies (for example, H<sub>2</sub>-plasma based smelting reduction for iron ores and side-stream materials) and could be coupled with approaches to monitor and control the process, obtain new sets of data and develop new models.
- 2.2. Enhance the iron reduction process and boost competitiveness, resilience, and reliability by:
  - Create industrial partnerships (e.g., with H<sub>2</sub> producers).
  - Expand H<sub>2</sub> supply options for eco-friendly steelmaking.
  - Explore alternatives, e.g. ammonia (NH<sub>3</sub>), liquid organic hydrogen carriers (LOHC), and metals as H<sub>2</sub> carriers.
  - Assess economic risks and benefits.
  - Prove the effectiveness and efficiency of H<sub>2</sub> supply methods (e.g., pure H<sub>2</sub>, NH<sub>3</sub>) by comparing at least two options.
- 2.3. Enhance the iron reduction process by incorporating and improving the use of electrolysis of iron ore and liquid metal oxide at steelmaking sites.
- 2.4. Limit the use of water resources and enhance water recovery related to the conversion of iron oxide to crude steel by H<sub>2</sub>, and consider it as input material for further utilization (e.g., possible decentralized H<sub>2</sub> production at steel plants in regions prone to drought). In this context, address solutions for water re-utilization, and consider energy availability issues, and solutions excelling in energy efficiency.
- 2.5. Demonstrate the integration of CO<sub>2</sub> neutral iron ore reduction, DRI smelting, and/or heating technologies in steelmaking at industrial scale, into new or existing hardware or steelmaking processes and sites.
- 2.6. With focus on carbon direct avoidance independent on the carbon origin (e.g. biocarbon), inject secondary C carriers and consider the impact of accompanied trace elements on iron and steelmaking operations both on the liquid steel (e.g. phosphorus, sulfur), and on the off-gases (e.g. dust). The process should be CO<sub>2</sub>-reduced or CO<sub>2</sub> neutral. The impact includes by-products and downstream properties.

### **3. Technologies to improve energy efficiency, increase heat recovery and enhance Process Integration (PI) approaches in steel production**

This objective is directly linked to Art.8 of the RFCS Decision 2021/1094<sup>1</sup> and it addresses steel process integration and process/energy efficiency in near-zero-carbon steel production with a view to substantially reducing emissions, energy consumption, carbon footprint and other environmental impacts, as well as conserving resources. Proposals are expected to develop and integrate new technologies or include and adapt innovative applications developed for other sectors for increasing the energy efficiency of steel production by, for example, better recovery of waste heat, prevention of energy losses, hybrid heating techniques and energy management solutions. Research and technological development to demonstrate and improve near-zero-carbon steel production processes should achieve improved product quality (validated by appropriate in-depth characterization) and increasing productivity.

Proposals are encouraged to involve expertise also from sectors other than steel manufacturing, for example, envisaging collaborations that could foresee the re-use of excess energy or developers of new concepts, like for heat exchangers.

Proposals addressing this objective should cover at least two of the following areas as well as outline how they would be particularly beneficial in the context of full or near full decarbonisation pathways for the concerned production technologies and not be limited to facilitate incremental change:

3.1. Proposals addressing this area shall demonstrate the application of one of the following:

- Innovative and advanced energy solutions on steelmaking sites.
- Renewable energy sources integrated in steelmaking sites.
- Iron power technology for high temperature and/or electricity.

The purpose is to address smart energy use in steel production by the integration of generating solutions for electricity and/or heat. Thus, the aim is to target issues of grid balance through demand-response harmony, adapt the system to variable demand and generation, reduce energy demand during peak hours and/or provide alternative heat sources that do not directly depend on grid electricity. Energy applications aligned with technology advancements in steel production should be preferred.

3.2. Introduction of heat transfer media (e.g. diathermic oil, molten salt, liquid metals) not yet considered state-of-the-art in the steelmaking process, but that could improve the thermal exchange process and ultimately reduce CO<sub>2</sub> emissions. This can include a new class of dedicated hardware and infrastructure designed and manufactured using novel techniques, topologies, and materials (for example, in combination with SiC), that would enable far greater exchanger efficiency, thus boosting the performance of the process, and target specific harsh environment (e.g. high corrosion in the case of molten salt, high temperature, high pressure, extended lifetime). This area tackles the two main factors limiting performance and efficiency of heat exchanging technologies: i) the structure (design and material), that limits the heat transfer rate, and ii) the integration in the surrounding system, that often creates performance limitations and loss of efficiency.

3.3. Integration of new technologies in the steel production for heat recovery and use at low temperature of processed gases (<300°C) and water (<100°C) (e.g. power generation at low temperature by Peltier cells, heat pumps, Stirling cycles, Rankine cycles, or chemical storage and fuel production).

3.4. Introduction and demonstration of embedded sensors, also via direct deposition (e.g. 3D printing), on parts of heat-generating and/or heat-exchanging technologies to validate the working conditions, better control the processes and their energy efficiency, and collect relevant data for modelling purposes. Evaluate performance, quality, and reliability of the sensors, especially when they are custom-designed for direct positioning on working parts or exposed to harsh environments (very high temperature conditions).

3.5. Integration of novel materials and processes to efficiently transfer heat to semi-finished products from unconventional energy sources; this includes new combustion systems in hot rolling mill furnaces, such as reheating and heat-treatment of cast and rolled products with a smart integration of fossil-free energy carriers, such as liquids (e.g. bioethanol, bio-methanol), electricity and gaseous feeds (e.g. green hydrogen and gaseous fuels resulting from iron and

steelmaking process); these new energy sources require that furnace refractories and heat exchange materials are suitable for this new environment, and that the systems can be flexibly used and controlled depending on the availability of renewable resources (e.g. integration of hydrogen systems with green electricity).

- 3.6. Improvement of post combustion control valid for EAF, DRI and BF/BOF regarding their specific equipment and the relevant interconnection.
- 3.7. Integration of novel pre-melting scrap (or other raw materials) technologies using available heat sources (waste heat, renewable energy, or excess steel plant gases, etc.), which can be integrated in conventional steel plants and allow the reduction of the hot metal ratio in the BOF or the specific energy consumption in the EAF.
- 3.8. Integration of novel technologies for recovery of high temperature waste heat from gases and intermediate products (e.g. slabs, slags) for re-use in steel making operations (for instance for heating/pre-heating of raw materials and recycled materials before charging to metallurgical processes by chemical and sensible energy from process gases), or further major reduction of energy losses through improved pre-heating/heating technologies (e.g. in hot rolling mill furnaces), or novel technologies for the generation of heat via electricity-based approaches, including RF, infrared technology and heat pumps. Clearly quantify the improvement in terms of efficiency and CO<sub>2</sub> reduction for the plant and define the possible benefits of upgrading also other pre-heating/heating parts of the same plant.
- 3.9. Demonstrate technologies allowing the integration of the product of hot reducing gases suitable to be injected in a DRI plant and/or blast furnace and/or EAF to reduce the fossil feedstock rate and demonstrating an overall CO<sub>2</sub> mitigation effect (i.e using C-lean energy sources and/or valorising excess steel plant gases).
- 3.10. Integrate novel technologies or injection means to increase or make more efficient the injection of reducing gases in a DRI plant and/or blast furnace, possibly at different levels of the reactor.

#### **4. Advanced steel alloys for special applications**

This objective is directly linked to Art.9 of the RFCS Decision 2021/1094<sup>1</sup> addressing advanced steel grades and applications. The objective targets in-depth research and technological development focused primarily on meeting, validating and demonstrating the requirements for production and marketability of advanced steel grades that respond to the needs for special market applications in the green economy. Steel alloys addressing special applications generally exhibit the special characteristics of being highly resistant to harsh environments (high corrosion, high temperature, high pressure), being exceptionally durable and showing high hardness and high strength. Applications under this call objective should address the value chain of the technologies listed and named in the Net Zero Industry Act (NZIA)<sup>6</sup>, for example, but not limited to, steel alloys for towers of wind turbines, geothermal, and nuclear modular reactors.

Proposals addressing this objective are strongly encouraged to engage with customers for the final steel product into consideration to guarantee market acceptance (for example, producers of parts for wind turbines). In depth material validation (such as, for example, high-resolution Transmission Electron Microscopy (TEM) and/or high-throughput and multi-modal material characterization possibly in collaboration with the network of European synchrotron and neutron characterization facilities) should be included to study critical material aspects and

validate the products for the purpose of real-world use; coupling also with real-world testing is strongly suggested. Consider creating a flow of relevant statistical information to feed data analytics. Proposals should cover at least two of the following areas.

- 4.1. Evaluate the effects of process variables fluctuations when moving towards a carbon neutral steel production route, focusing on the development of special steel grades/alloys with specific mechanical and physical properties for the green economy (for example, but not limited to, steel with low corrosion level for offshore wind applications, H2 embrittlement, etc) and harsh environment applications (for example, high-temp high-pressure applications and nuclear): develop and validate the necessary process-tuning to allow production of special steels.
- 4.2. Develop and validate advanced steel grades with increased use of new input materials (e.g., scrap, residues, secondary raw materials, medium/low grade ores etc.) and test them under real-world operating conditions to understand possible quality and reliability issues influencing lifetime performance.
- 4.3. Demonstrate at industrial scale (e.g. for downstream processing and manufacturing processes) the manufacture of advanced and special steel grades with improved life cycle contributions to CO2 emission reduction. Define new test approaches and needs for standardization of 'carbon neutral steel' production and products.
- 4.4. Develop and validate predictive simulations to define product characteristics and physical and/or mechanical properties, based on specific process variables in CO2 neutral steel routes.
- 4.5. Introduce and demonstrate new ad-hoc sensorics coupled with innovative digital monitoring systems at significant stages of the carbon neutral steel production route that would allow collecting relevant data to monitor the manufacturing process and reconstruct the history of a product to improve quality control and detection of faults and defects. Inspect problematic parts via specific tests (for example, but not limited to, tensile and bending tests), associate in-depth microstructure analysis to detect specific signatures, collect statistical data and ultimately develop and validate predictive reliability models.

## **5. Circular economy and sector coupling solutions to meet the zero-waste goal for steelmaking**

As stated in Art. 10 of the RFCS Decision 2021/1094<sup>1</sup>, it is very important to consider circular economy activities taking place in the steel industry and their contribution to raw materials for both the steelmaking process and other industrial cycles. This call objective targets, in both steel production and steel utilisation, the conservation of resources, the preservation of ecosystems, the transition to a circular economy with the valorisation of specific chains that could contribute not only to provide a secondary raw material for the steel manufacturing industry, but also to support the recovery of critical raw materials following the objectives of the Critical Raw Materials Act (CRMA)<sup>7</sup>. Advanced, efficient and low-carbon-emitting technologies have to be prioritised, together with the introduction of integrated advanced digital technologies and improved data analytics approaches devoted to the specific application. Proposals addressing this objective should cover at least two of the following areas, as well as outline links existing between circular economy, innovative digitalization technologies and approaches.

- 5.1. Implementation in the steel plant (or strictly connected to it) of highly efficient processes and advanced technologies for reduce, reuse, and recycling

options in terms of quality and quantity of metal recovery (e.g. iron, non-ferrous metals, and critical raw materials) and/or mineral fractions from in-plant steel making residues and by-products associated with present or next generation iron ore and steelmaking process. Introduction of process changes and/or novel processes can be considered to modify the composition of residues to better fit for internal and external re-use.

- 5.2. Demonstration of the use of secondary carbon carriers in iron and steelmaking processes as substitute of solid carbon fossil sources (such as but not limited to polymers from waste plastic, biogenic residues from food/ agricultural/ wood, carbon fibres-reinforced polymers, automotive shredder residues) along with their new or improved preparation processes (agglomeration, torrefaction, carbonisation, gasification, etc.), which can be integrated in conventional steel plants in order to substitute a significant fraction of solid fossil fuels (coal and coke).
- 5.3. Use energy efficient technologies to improve ferrous scrap preparation (e.g. characterization / sorting / cleaning), scrap tracking and handling, considering also scrap yard management, scrap charge preparation for quality upgrading and valorisation of scrap from specific chains (e.g. scrap from food packages). This can also include approaches to remove undesired tramp elements from scrap, such as copper, before remelting in EAF or BOF. These technologies have to imply an overall reduction of the environmental impact measured by the life cycle assessment (LCA) of the involved products in terms of energy consumption, water use and soil consumption if compared to the actual context. Application of technologies for separation and recovery of metals used for steel coating (i.e. aluminium, zinc and tin) can also be considered. After such a recovery of metals used for coating, the applied treatment could make the scrap available for the production of the same kind of dismissed products that have generated the scrap to demonstrate an infinite recycling approach (i.e. steel scrap obtained from food cans can be used to produce new food cans).
- 5.4. Improve and/or develop technologies to broaden the types of ore grades and/or residues containing iron oxides and demonstrate the use in different iron and steelmaking processes, which can include an electric melting furnace for the processing of DRI from low/medium grade ores together with secondary material streams from iron and steelmaking.
- 5.5. Novel secondary materials and waste traceability solutions integrated into robust monitoring frameworks.

## **6. Preparation of steel CO/CO<sub>2</sub> gases for Carbon Capture Use and Storage (CCUS)**

This objective is directly linked to Art.10 of the RFCS Decision 2021/1094<sup>1</sup> and it supports research and technological development to enhance and demonstrate conservation of resources, protection of the environment and circular economy. In both steel production and steel utilisation, the conservation of resources, the preservation of ecosystems, the transition to a circular economy and safety issues shall form an integral part of the research and technological development work. Proposals under this objective shall especially address the aspect of utilisation of process gases and elimination of waste gases emissions from steel production. Thus, the objective focuses on validating and demonstrating technologies for CCUS, as one of the approaches to reduce the release of greenhouse gases. CCUS requires pre- and post-capture processes and technologies (filtering, separation, conditioning, catalysis, etc), including also the possible presence of parallel flows, as, for example, H<sub>2</sub> when the production of methanol is foreseen. If the captured

carbon is converted into fuel for use directly within the steelmaking process, appropriate post-combustion carbon capture technologies should be always envisaged.

Proposals addressing this objective should cover at least two of the following areas.

- 6.1. Evaluation, validation and demonstration of the compatibility of metallurgical gas streams from steel plants with current and/or future CCUS infrastructures, including also compatibility with technologies for heterogeneous catalysis routes (thermal catalysis, electrocatalysis, photoelectrocatalysis) for CO<sub>2</sub> conversion into chemicals and fuels (excluding the use for transportation).
- 6.2. In-process integration of pre-/post preparation steps for CO/CO<sub>2</sub> capture steps in steel plants (such as but not limited to Blast Furnace - Basic Oxygen Furnace (BF-BOF), Electric Arc Furnace (EAF), Direct Reduction (DR) plants, up and downstream processes).
- 6.3. Demonstration of conditioning and separation of metallurgical gases (containing CO<sub>2</sub>, CO, CH<sub>4</sub>, etc.) to meet specifications for CCUS applications.
- 6.4. Energetic integration of preparation steps in steel plants for reliable CCUS approaches for steel gases (cleaning, drying, sulphur removal, CO/CO<sub>2</sub> scrubbing, conversion, compression, heating, reforming, etc.).
- 6.5. System impact analysis (e.g. cost/benefit, efficiency, reliability, sustainability, environmental impact, etc.) and demonstration of the use of synthetic fuels elaborated from CO/CO<sub>2</sub> capture and storage, to be applied in steel thermal treatment processes coupled with carbon capture technologies. This area allows for the possibility to apply an industrial symbiosis approach.

#### Themes and priorities (scope)

There are no annual priorities for this topic.

#### Activities that can be funded (scope) – Type of action

This topic concerns RFCS Pilot and Demonstration Projects (PDPs).

Pilot Projects target the construction, operation and development of (significant parts of) installations on an appropriate scale and using suitably large components in order to examine the potential for putting theoretical or laboratory results into practice and/or increasing the reliability of the technical and economic data needed to progress to demonstration stage, and in certain cases to industrial and/or commercial stage.

Demonstration Projects cover the construction and/or operation of (significant parts of) an industrial-scale installation, in order to bring together all the technical and economic data in order to proceed with the industrial and/or commercial exploitation of the technology at minimum risk.

Both Pilot and Demonstration Projects aim to bridge the gap between Research and Innovation.

Applicants may submit proposals for either Pilot or Demonstration projects (see Art. 15 and Art. 16 of Council Decision 2008/376/EC<sup>10</sup>).

Proposals shall be in line with Council Decision (EU) 2021/1094<sup>1</sup>.

Proposals shall be in line with the general and specific objectives listed in the Memorandum of Understanding<sup>11</sup> for the European partnership on Clean Steel launched in Horizon Europe<sup>12</sup>.

Proposals need to show in the excellence part of the application form how they contribute to the multi-annual SRIA<sup>13</sup> of the Clean Steel Partnership.

Proposals should address the application of innovative technologies related to one or two of the six call objectives listed. If addressing two call objectives, proposals should clearly identify which Work Packages address which topic(s) of which call objective(s).

Research activities focused on validating and demonstrating technologies and processes have to be considered in agreement with the needs of the selected TRL levels, which are expected to start at TRL 4-5 and achieve TRL 7-8 by the end of the project.

Targeted improvements (compared to the existing installation or, for new projects, to the relevant ETS benchmark) shall be clearly quantified and demonstrated with energy system and materials balance assessments (including emissions) clearly defined by the applicants. This requirement applies to all the call objectives, with the exception of objective 1.

Collaborations with start-ups and SMEs are encouraged.

When addressing the call objectives, proposals should pay particular attention, when relevant, to what is reported in the Art. 10a of the RFCS Decision 2021/1094 and, more precisely, include activities to address potential solutions that can improve the working conditions of employees at steelmaking facilities, in particular health, safety and ergonomics in and around the workplace.

### *Expected impact*

Proposals shall demonstrate direct relevance to contribute to achieving the European Green Deal goals and the full decarbonisation process of the steel sector towards climate neutrality.

Proposals are expected to include an exploitation strategy outlining possible integration of the outcomes of the project (including the pilot/demonstrators) in an industrial environment.

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<sup>10</sup> 2008/376/EC: Council Decision of 29 April 2008 on the adoption of the Research Programme of the Research Fund for Coal and Steel and on the multiannual technical guidelines for this programme, (OJ L 130, 20.5.2008, p. 7). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008D0376>.

<sup>11</sup> [Memorandum of Understanding for the Co-programmed European Partnership for Clean Steel - Low Carbon Steelmaking](#)

<sup>12</sup> [Commission and industry invest €22 billion in new European Partnerships to deliver solutions to major societal challenges](#)

<sup>13</sup> [Strategic Research and Innovation Agenda \(SRIA\)](#)

Proposals are expected to include a preliminary assessment of their economic viability.

### 3. Available budget

The available call budget is **EUR 100.000.000**.

We reserve the right not to award all available funds or to redistribute them between the call priorities, depending on the proposals received and the results of the evaluation.

### 4. Timetable and deadlines

Timetable and deadlines (indicative)	
Call opening:	01 February 2024
<u>Deadline for submission:</u>	<u>25 April 2024 – 17:00:00 CET</u> (Brussels)
Evaluation:	April - July 2024
Information on evaluation results:	September - October 2024
GA signature:	October - December 2024

### 5. Admissibility and documents

Proposals must be submitted before the **call deadline** (see *timetable section 4*).

Proposals must be submitted **electronically** via the Funding & Tenders Portal Electronic Submission System (accessible via the Topic page in the [Search Funding & Tenders](#) section). Paper submissions are NOT possible.


Proposals (including annexes and supporting documents) must be submitted using the forms provided *inside* the Submission System (⚠ NOT the documents available on the Topic page — they are only for information).

Proposals must be **complete** and contain all the requested information and all required annexes and supporting documents:

- Application Form Part A — contains administrative information about the participants (future coordinator, beneficiaries and affiliated entities) and the summarised budget for the project (*to be filled in directly online*)
- Application Form Part B — contains the technical description of the project (*to be downloaded from the Portal Submission System, completed and then assembled and re-uploaded*)
- **mandatory annexes and supporting documents** (*to be uploaded*):
  - detailed budget table (former Form B3) (*template available in the Submission System*)



- CVs of core project team: not applicable
- activity reports of last year: not applicable
- list of previous projects (key projects for the last 4 years in the area of the topic) (*template available in Part B*)

 Please note that other documents will NOT be accepted and any additional documents uploaded will NOT be evaluated.


The amounts entered into the summarised budget table (filled in directly online) must correspond to the amounts calculated in the detailed budget table. In case of discrepancies, the amounts in the online summarised budget table will prevail.

At proposal submission, you will have to confirm that you have the **mandate to act** for all applicants. Moreover, you will have to confirm that the information in the application is correct and complete and that the participants comply with the conditions for receiving EU funding (especially eligibility, financial and operational capacity, exclusion, etc). Before signing the grant, each beneficiary and affiliated entity will have to confirm this again by signing a declaration of honour (DoH). Proposals without full support will be rejected.

The application must be **readable, accessible and printable**.

Proposals are limited to maximum **70 pages** (Part B). Evaluators will not consider any additional pages.

You may be asked at a later stage for further documents (*for legal entity validation, financial capacity check, bank account validation, etc*).

 For more information about the submission process (including IT aspects), consult the [Online Manual](#).

## 6. Eligibility


### Eligible participants (eligible countries)

In order to be eligible, the applicants (beneficiaries and affiliated entities) must:

- be legal entities (public or private bodies, *e.g. undertakings, public bodies, research organizations, higher or secondary education establishments or other legal entities*) which carry out an R&D activity or substantially contribute to such an activity
- be established in one of the eligible countries, i.e.:
  - EU Member States (including overseas countries and territories (OCTs))
  - non-EU countries :
    - countries associated to the RFCS or countries which are in ongoing negotiations for an association agreement and where the agreement enters into force before grant signature ([list of participating countries](#)).

Beneficiaries and affiliated entities must register in the [Participant Register](#) — before submitting the proposal — and will have to be validated by the Central Validation Service (REA Validation). For the validation, they will be requested to upload documents showing legal status and origin.

Other entities may participate in other consortium roles, such as associated partners, subcontractors, third parties giving in-kind contributions, etc (see section 13).

 Please note that, in RFCS, associated partners may participate only if their participation is in the EU interest.


### *Specific cases*

Natural persons — Natural persons are eligible.

International organisations — International organisations are not eligible. The rules on eligible countries do not apply to them.

Entities without legal personality — Entities which do not have legal personality under their national law may exceptionally participate, provided that their representatives have the capacity to undertake legal obligations on their behalf, and offer guarantees for the protection of the EU financial interests equivalent to that offered by legal persons<sup>14</sup>.

EU bodies — EU bodies (with the exception of the European Commission Joint Research Centre) can NOT be part of the consortium.

Associations and interest groupings — Entities composed of members may participate as 'sole beneficiaries' or 'beneficiaries without legal personality'<sup>15</sup>.  Please note that if the action will be implemented by the members, they should also participate (either as beneficiaries or as affiliated entities, otherwise their costs will NOT be eligible).

Countries currently negotiating association agreements — Beneficiaries from countries with ongoing negotiations (see above) may participate in the call and can sign grants if the negotiations are concluded before grant signature (with retroactive effect, if provided in the agreement).

EU restrictive measures — Special rules apply for certain entities (e.g. entities subject to [EU restrictive measures](#) under Article 29 of the Treaty on the European Union (TEU) and Article 215 of the Treaty on the Functioning of the EU (TFEU)<sup>16</sup> and entities covered by Commission Guidelines No [2013/C 205/05](#)<sup>17</sup>). Such entities are not eligible to participate in any capacity, including as beneficiaries, affiliated entities, associated partners, subcontractors or recipients of financial support to third parties (if any).



For more information, see [Rules for Legal Entity Validation, LEAR Appointment and Financial Capacity Assessment](#).

### *Consortium composition*

Proposals must be submitted by a consortium of:

- minimum 2 independent applicants (beneficiaries; not affiliated entities) from 2 different eligible countries

<sup>14</sup> See Article 197(2)(c) EU Financial Regulation [2018/1046](#).

<sup>15</sup> For the definitions, see Articles 187(2) and 197(2)(c) EU Financial Regulation [2018/1046](#).

<sup>16</sup> Please note that the EU Official Journal contains the official list and, in case of conflict, its content prevails over that of the [EU Sanctions Map](#).

<sup>17</sup> Commission guidelines No [2013/C 205/05](#) on the eligibility of Israeli entities and their activities in the territories occupied by Israel since June 1967 for grants, prizes and financial instruments funded by the EU from 2014 onwards (OJEU C 205 of 19.07.2013, pp. 9-11).

Independent — Independent means that none of the entities must be under the direct or indirect control of the other or under the same direct or indirect control as the other. For this purpose, control may, in particular, take either of the following forms:

- the direct or indirect holding of more than 50 % of the issued share capital, or of a majority of the voting rights
- the direct or indirect holding, in fact or in law, of decision-making powers.

The following relationships do not in themselves constitute control:

- if the entities have the same public investment corporation, institutional investor or venture-capital company with a direct or indirect holding of more than 50 % of the issued share capital or a majority of voting rights
- if the entities are owned or supervised by the same public body.

### Eligible activities

Eligible activities are the ones set out in section 2 above.

Projects should take into account the results of projects supported by other EU funding programmes. The complementarities must be described in the project proposals (Part B of the Application Form).

Projects must comply with EU policy interests and priorities (*such as environment, social, security, industrial and trade policy, etc*).

Financial support to third parties is not allowed.

### Geographic location (target countries)

Proposals must relate to activities taking place in the eligible countries (*see above*).

### Duration

Projects should normally range between 36 and 54 months.

Projects of longer duration may be accepted in duly justified cases. Extensions are possible, if duly justified and through an amendment.

### Project budget

Project budgets (requested grant amount) are expected to range between EUR 5 and EUR 9 million per project (and exceptionally up to EUR 18 million for large demonstrators).

This does not however preclude the submission/selection of a proposal requesting other amounts. The grant awarded may be lower than the amount requested.

### Ethics

Projects must comply with:

- highest ethical standards (including highest standards of research integrity) and
- applicable EU, international and national law.

Projects involving ethics issues will have to undergo an ethics review to authorise funding and may be made subject to specific ethics rules (which become part of the

Grant Agreement in the form of ethics deliverables, e.g. *ethics committee opinions/notifications/authorisations required under national or EU law*).

## 7. Financial and operational capacity and exclusion

### Financial capacity

Applicants must have **stable and sufficient resources** to successfully implement the projects and contribute their share. Organisations participating in several projects must have sufficient capacity to implement all these projects.

The financial capacity check will be carried out on the basis of the documents you will be requested to upload in the [Participant Register](#) during grant preparation (e.g. *profit and loss account and balance sheet, business plan, audit report produced by an approved external auditor, certifying the accounts for the last closed financial year, etc*). The analysis will be based on neutral financial indicators, but will also take into account other aspects, such as dependency on EU funding and deficit and revenue in previous years.

The check will normally be done for all beneficiaries, except:

- public bodies (entities established as public body under national law, including local, regional or national authorities)
- if the individual requested grant amount is not more than EUR 60 000.

If needed, it may also be done for affiliated entities.

If we consider that your financial capacity is not satisfactory, we may require:

- further information
  - an enhanced financial responsibility regime, i.e. joint and several responsibility for all beneficiaries or joint and several liability of affiliated entities (*see below, section 10*)
  - prefinancing paid in instalments
  - (one or more) prefinancing guarantees (*see below, section 10*)
- or
- propose no prefinancing
  - request that you are replaced or, if needed, reject the entire proposal.



For more information, see [Rules for Legal Entity Validation, LEAR Appointment and Financial Capacity Assessment](#).

### Operational capacity

Applicants must have the **know-how, qualifications** and **resources** to successfully implement the projects and contribute their share (including sufficient experience in projects of comparable size and nature).

This capacity will be assessed together with the 'Quality and efficiency of the implementation' award criterion, on the basis of the competence and experience of the applicants and their project teams, including operational resources (human, technical and other) or, exceptionally, the measures proposed to obtain it by the time the task implementation starts.

If the evaluation of the award criterion is positive, the applicants are considered to have sufficient operational capacity.

Applicants will have to show their capacity via the following information:

- description of the consortium participants
- list of previous projects (key projects for the last 4 years in the area of the topic).

Additional supporting documents may be requested, if needed to confirm the operational capacity of any applicant.

### Exclusion

Applicants which are subject to an **EU exclusion decision** or in one of the following **exclusion situations** that bar them from receiving EU funding can NOT participate<sup>18</sup>:

- bankruptcy, winding up, affairs administered by the courts, arrangement with creditors, suspended business activities or other similar procedures (including procedures for persons with unlimited liability for the applicant's debts)
- in breach of social security or tax obligations (including if done by persons with unlimited liability for the applicant's debts)
- guilty of grave professional misconduct<sup>19</sup> (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- committed fraud, corruption, links to a criminal organisation, money laundering, terrorism-related crimes (including terrorism financing), child labour or human trafficking (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- shown significant deficiencies in complying with main obligations under an EU procurement contract, grant agreement, prize, expert contract, or similar (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- guilty of irregularities within the meaning of Article 1(2) of EU Regulation [2988/95](#) (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant)
- created under a different jurisdiction with the intent to circumvent fiscal, social or other legal obligations in the country of origin or created another entity with this purpose (including if done by persons having powers of representation, decision-making or control, beneficial owners or persons who are essential for the award/implementation of the grant).

Applicants will also be refused if it turns out that<sup>20</sup>:

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<sup>18</sup> See Articles 136 and 141 of EU Financial Regulation [2018/1046](#).

<sup>19</sup> Professional misconduct includes: violation of ethical standards of the profession, wrongful conduct with impact on professional credibility, false declarations/misrepresentation of information, participation in a cartel or other agreement distorting competition, violation of IPR, attempting to influence decision-making processes or obtain confidential information from public authorities to gain advantage.

<sup>20</sup> See Article 141 EU Financial Regulation [2018/1046](#).

- during the award procedure they misrepresented information required as a condition for participating or failed to supply that information
- they were previously involved in the preparation of the call and this entails a distortion of competition that cannot be remedied otherwise (conflict of interest).

## 8. Evaluation and award procedure

The proposals will have to follow the **standard submission and evaluation procedure** (one-stage submission + one-step evaluation).

An **evaluation committee** (assisted by independent outside experts) will assess all applications. Proposals will first be checked for formal requirements (admissibility, and eligibility, *see sections 5 and 6*). Proposals found admissible and eligible will be evaluated (for each budget envelope; *see section 3*) against the operational capacity and award criteria (*see sections 7 and 9*) and then ranked according to their scores.


The evaluation process will include a Hearing step that will support the evaluation committee to establish the final assessment and scores. All the applicants are invited to participate in the Hearing step during the central evaluation week for a physical meeting in Brussels. Information on the set up of the Hearing will be provided at the RFCS Big Tickets Info Day.

For proposals with the same score (within a topic or budget envelope) the **priority order** will be determined according to the following approach:

Successively for every group of *ex aequo* proposals, starting with the highest scored group, and continuing in descending order:

- 1) Proposals will be prioritised according to the scores they have been awarded for the criterion 'Impact'; when these scores are equal, priority will be based on scores for 'Excellence' and lastly 'Quality and efficiency of the implementation'.
- 2) If two proposals with the same overall score have the same scores for all 3 criteria:
  - the proposal with the highest percentage of participants of private for profit organisations will be ranked first
  - the proposal with the highest percentage of budget assigned in the proposal to private for profit organisations will be ranked first.

All proposals will be informed about the evaluation result (**evaluation result letter**). Successful proposals will be invited for grant preparation; the other ones will be put on the reserve list or rejected.

 No commitment for funding — Invitation to grant preparation does NOT constitute a formal commitment for funding. We will still need to make various legal checks before grant award: *legal entity validation, financial capacity, exclusion check, etc.*

**Grant preparation** will involve a dialogue in order to fine-tune technical or financial aspects of the project and may require extra information from your side. It may also include adjustments to the proposal to address recommendations of the evaluation committee or other concerns. Compliance will be a pre-condition for signing the grant.

If you believe that the evaluation procedure was flawed, you can submit a **complaint** (following the deadlines and procedures set out in the evaluation result letter). Please note that notifications which have not been opened within 10 days after sending will

be considered to have been accessed and that deadlines will be counted from opening/access (see also [Funding & Tenders Portal Terms and Conditions](#)). Please also be aware that for complaints submitted electronically, there may be character limitations.

## 9. Award criteria

The **award criteria** for this call are as follows:

- **Excellence (5 points):** clarity and consistency of project, objectives and planning; extent to which they match the themes and priorities and objectives of the call; extent to which the proposed work is ambitious and goes beyond the state of the art; soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches
- **Impact (5 points):** viability of the pathways to achieve the expected outcomes and impacts specified in the call, and the likely scale and significance of the contributions from the project; suitability and quality of the measures to maximise the expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities
- **Quality and efficiency of the implementation (5 points):**
  - **Project design and implementation:** technical quality; logical links between the identified problems, needs and solutions proposed (logical frame concept); methodology for implementing the project (concept and methodology, management, procedures, timetable, risks and risk management, monitoring and evaluation); feasibility of the project within the proposed time frame; quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall; cost effectiveness (sufficient/appropriate budget for proper implementation; best value for money)
  - **Project team and cooperation arrangements:** quality of the consortium and project teams; appropriate procedures and problem-solving mechanisms for cooperating within the project teams and consortium; capacity and role of each participant, and the extent to which the consortium as a whole brings together the necessary expertise

Award criteria	Minimum pass score	Maximum score
Excellence	3	5
Impact	3	5
Quality and efficiency of the implementation	3	5
<b>Overall (pass) scores</b>	<b>10</b>	<b>15</b>

Maximum points: 15 points.

Individual thresholds per criterion: 3/5, 3/5 and 3/5 points.

Overall threshold: 10 points.

Proposals that pass the individual thresholds AND the overall threshold will be considered for funding — within the limits of the available budget (i.e. up to the budget ceiling). Other proposals will be rejected.

To ensure a balanced portfolio, the ranking list may be adapted to ensure that also proposals under the other call objectives (*see section 2*) are funded, provided that they have passed all thresholds.

## **10. Legal and financial set-up of the Grant Agreements**

If you pass evaluation, your project will be invited for grant preparation, where you will be asked to prepare the Grant Agreement together with the EU Project Officer.

This Grant Agreement will set the framework for your grant and its terms and conditions, in particular concerning deliverables, reporting and payments.

The Model Grant Agreement that will be used (and all other relevant templates and guidance documents) can be found on [Portal Reference Documents](#).

### Starting date and project duration

The project starting date and duration will be fixed in the Grant Agreement (*Data Sheet, point 1*). Normally the starting date will be after grant signature. Retroactive application can be granted exceptionally for duly justified reasons — but never earlier than the proposal submission date.

Project duration: *see section 6 above*

### Milestones and deliverables

The milestones and deliverables for each project will be managed through the Portal Grant Management System and will be reflected in Annex 1 of the Grant Agreement.

The following deliverables will be mandatory for all projects:

- communication and dissemination plan
- comprehensive overview of the project (month 6)
- public publishable report (last month of the project)

### Form of grant, funding rate and maximum grant amount

The grant parameters (*maximum grant amount, funding rate, total eligible costs, etc*) will be fixed in the Grant Agreement (*Data Sheet, point 3 and art 5*).

Project budget (requested grant amount): *see section 6 above*

The grant will be a budget-based mixed actual cost grant (actual costs, with unit cost and flat-rate elements). This means that it will reimburse ONLY certain types of costs (eligible costs) and costs that were *actually* incurred for your project (NOT the *budgeted* costs). For unit costs and flat-rates, you can charge the amounts calculated as explained in the Grant Agreement (*see art 6 and Annex 2 and 2a*).

The costs will be reimbursed at the funding rate fixed in the Grant Agreement: **50 %**



Grants may NOT produce a profit (i.e. surplus of revenues + EU grant over costs). For-profit organisations must declare their revenues and, if there is a profit, we will deduct it from the final grant amount (*see art 22.3*).

Moreover, please be aware that the final grant amount may be reduced in case of non-compliance with the Grant Agreement (*e.g. improper implementation, breach of obligations, etc*).

### Budget categories and cost eligibility rules

The budget categories and cost eligibility rules are fixed in the Grant Agreement (Data Sheet, point 3, art 6 and Annex 2).

#### *Budget categories for this call:*

- A. Personnel costs
  - A.1 Employees, A.2 Natural persons under direct contract, A.3 Seconded persons
  - A.4 SME owners and natural person beneficiaries
- B. Subcontracting costs
- C. Purchase costs
  - C.2 Equipment
  - C.3 Other goods, works and services
- E. Indirect costs

#### *Specific cost eligibility conditions for this call:*

- personnel costs:
  - SME owner/natural person unit cost<sup>21</sup> Yes
- equipment costs: depreciation + full cost for listed equipment (*– full costs allowed only for PDP actions*)
- costs for other goods, works and services (operating costs):
  - raw materials
  - consumables
  - energy
  - transportation of raw materials, consumables, equipment, products, feedstock and fuel
  - maintenance, repair, alteration or transformation of existing equipment
  - IT and other specific services
  - analysis and tests
  - dedicated workshop organisation
  - costs for the certificate on the financial statements (CFS) and bank guarantee
  - protection of knowledge

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<sup>21</sup> Commission [Decision](#) of 20 October 2020 authorising the use of unit costs for the personnel costs of the owners of small and medium-sized enterprises and beneficiaries that are natural persons not receiving a salary for the work carried out by themselves under an action or work programme (C(2020)7715).

- assistance from third parties
- other cost categories:
  - costs for financial support to third parties: not allowed
- indirect cost flat-rate: 35% of the eligible personnel costs (category A, except volunteers costs, if any)
- VAT: non-deductible VAT is eligible (but please note that since 2013 VAT paid by beneficiaries that are public bodies acting as public authority is NOT eligible)
- other:
  - in-kind contributions for free are allowed, but cost-neutral, i.e. they cannot be declared as cost
  - project websites: communication costs for presenting the project on the participants' websites or social media accounts are eligible; costs for *separate* project websites are not eligible
  - other ineligible costs: No


### Reporting and payment arrangements

The reporting and payment arrangements are fixed in the Grant Agreement (*Data Sheet, point 4 and art 21 and 22*).

After grant signature, you will normally receive a **prefinancing** to start working on the project (float of normally **40%** of the maximum grant amount; exceptionally less or no prefinancing). The prefinancing will be paid 30 days from entry into force/10 days before starting date/financial guarantee (if required) — whichever is the latest.

There will be one or more **interim payments** (with cost reporting through the use of resources report). **Payment of the balance:** At the end of the project, we will calculate your final grant amount. If the total of earlier payments is higher than the final grant amount, we will ask you (your coordinator) to pay back the difference (recovery).

All payments will be made to the coordinator.

 Please be aware that payments will be automatically lowered if one of your consortium members has outstanding debts towards the EU (granting authority or other EU bodies). Such debts will be offset by us — in line with the conditions set out in the Grant Agreement (*see art 22*).

Please also note that you are responsible for keeping records on all the work done and the costs declared. The Grant Agreement contains additional record-keeping rules (*Data Sheet, point 3 and art 20*).

### Prefinancing guarantees

If a prefinancing guarantee is required, it will be fixed in the Grant Agreement (*Data Sheet, point 4*). The amount will be set during grant preparation and it will normally be equal or lower than the prefinancing for your grant.

The guarantee should be in euro and issued by an approved bank/financial institution established in an EU Member State. If you are established in a non-EU country and would like to provide a guarantee from a bank/financial institution in your country, please contact us (this may be exceptionally accepted, if it offers equivalent security).

Amounts blocked in bank accounts will NOT be accepted as financial guarantees.

Prefinancing guarantees are formally NOT linked to individual consortium members, which means that you are free to organise how to provide the guarantee amount (*by one or several beneficiaries, for the overall amount or several guarantees for partial amounts, by the beneficiary concerned or by another beneficiary, etc*). It is however important that the requested amount is covered and that the guarantee(s) are sent to us in time to make the prefinancing (scanned copy via Portal AND original by post).

If agreed with us, the bank guarantee may be replaced by a guarantee from a third party.

The guarantee will be released at the end of the grant, in accordance with the conditions laid down in the Grant Agreement.

### Certificates

Depending on the type of action, size of grant amount and type of beneficiaries, you may be requested to submit different certificates. The types, schedules and thresholds for each certificate are fixed in the Grant Agreement (*Data Sheet, point 4 and art 24*).

### Liability regime for recoveries

The liability regime for recoveries will be fixed in the Grant Agreement (*Data Sheet point 4.4 and art 22*).

For beneficiaries, it is one of the following:

- limited joint and several liability with individual ceilings — *each beneficiary up to their maximum grant amount*
  - unconditional joint and several liability — *each beneficiary up to the maximum grant amount for the action*
- or
- individual financial responsibility — *each beneficiary only for their own debts*.

In addition, the granting authority may require joint and several liability of affiliated entities (with their beneficiary).

### Provisions concerning the project implementation

Ethics rules: *see Model Grant Agreement (art 14 and Annex 5)*

IPR rules: *see Model Grant Agreement (art 16 and Annex 5):*

- background and list of background: Yes
- protection of results: Yes
- exploitation of results: Yes
- additional information obligations relating to possible standardisation: Yes
- right to object to transfers and licensing: Yes
- rights of use on results: Yes
- access to results for policy purposes: Yes
- access to results in case of public emergency: Yes
- access rights to ensure continuity and interoperability obligations: No

Communication, dissemination and visibility of funding: *see Model Grant Agreement (art 17 and Annex 5):*

- communication and dissemination plan: Yes
- dissemination of results: Yes
- additional dissemination obligations: Yes
- additional communication activities: Yes

Specific rules for carrying out the action: *see Model Grant Agreement (art 18 and Annex 5)*:

- recruitment and working conditions for researchers: Yes

#### Other specificities

n/a

#### Non-compliance and breach of contract

The Grant Agreement (chapter 5) provides for the measures we may take in case of breach of contract (and other non-compliance issues).



For more information, see [AGA — Annotated Grant Agreement](#).

## **11. How to submit an application**

All proposals must be submitted directly online via the Funding & Tenders Portal Electronic Submission System. Paper applications are NOT accepted.

Submission is a **2-step process**:

### **a) create a user account and register your organisation**

To use the Submission System (the only way to apply), all participants need to [create an EU Login user account](#).

Once you have an EULogin account, you can [register your organisation](#) in the Participant Register. When your registration is finalised, you will receive a 9-digit participant identification code (PIC).

### **b) submit the proposal**

Access the Electronic Submission System via the Topic page in the [Search Funding & Tenders](#) section (or, for calls sent by invitation to submit a proposal, through the link provided in the invitation letter).

Submit your proposal in 3 parts, as follows:

- Part A includes administrative information about the applicant organisations (future coordinator, beneficiaries, affiliated entities and associated partners) and the summarised budget for the proposal. Fill it in directly online
- Part B (description of the action) covers the technical content of the proposal. Download the mandatory word template from the Submission System, fill it in and upload it as a PDF file
- Annexes (*see section 5*). Upload them as PDF file (single or multiple depending on the slots). Excel upload is sometimes possible, depending on the file type.

The proposal must keep to the **page limits** (*see section 5*); excess pages will be disregarded.

Documents must be uploaded to the **right category** in the Submission System otherwise the proposal might be considered incomplete and thus inadmissible.

The proposal must be submitted **before the call deadline** (*see section 4*). After this deadline, the system is closed and proposals can no longer be submitted.

Once the proposal is submitted, you will receive a **confirmation e-mail** (with date and time of your application). If you do not receive this confirmation e-mail, it means your proposal has NOT been submitted. If you believe this is due to a fault in the Submission System, you should immediately file a complaint via the [IT Helpdesk webform](#), explaining the circumstances and attaching a copy of the proposal (and, if possible, screenshots to show what happened).

Details on processes and procedures are described in the [Online Manual](#). The Online Manual also contains the links to FAQs and detailed instructions regarding the Portal Electronic Exchange System.

## 12. Help

As far as possible, ***please try to find the answers you need yourself***, in this and the other documentation (we have limited resources for handling direct enquiries):

- 1) [Online Manual](#)
- 2) FAQs on the Topic page (for call-specific questions in open calls; not applicable for actions by invitation)
- 3) [Portal FAQ](#) (for general questions).

Please also consult the Topic page regularly, since we will use it to publish call updates. (For invitations, we will contact you directly in case of a call update).

### Contact

For individual questions on the Portal Submission System, please contact the [IT Helpdesk](#).

Non-IT related questions should be sent to the following email address: [REA-RFCS@ec.europa.eu](mailto:REA-RFCS@ec.europa.eu).

Please indicate clearly the reference of the call and topic to which your question relates (*see cover page*).

## 13. Important



### IMPORTANT

- **Don't wait until the end** — Complete your application sufficiently in advance of the deadline to avoid any last minute **technical problems**. Problems due to last minute submissions (*e.g. congestion, etc*) will be entirely at your risk. Call deadlines can NOT be extended.
- **Consult** the Portal Topic page regularly. We will use it to publish updates and additional information on the call (call and topic updates).
- **Funding & Tenders Portal Electronic Exchange System** — By submitting the application, all participants **accept** to use the electronic exchange system in accordance with the [Portal Terms & Conditions](#).
- **Registration** — Before submitting the application, all beneficiaries, affiliated entities and associated partners must be registered in the [Participant Register](#). The participant identification code (PIC) (one per participant) is mandatory for the Application Form.
- **Consortium roles** — When setting up your consortium, you should think of organisations that help you reach objectives and solve problems.

The roles should be attributed according to the level of participation in the project. Main participants should participate as **beneficiaries** or **affiliated entities**; other entities can participate as associated partners, subcontractors, third parties giving in-kind contributions. **Associated partners** and third parties giving in-kind contributions should bear their own costs (they will not become formal recipients of EU funding). **Subcontracting** should normally constitute a limited part and must be performed by third parties (not by one of the beneficiaries/affiliated entities). Subcontracting going beyond 30% of the total eligible costs must be justified in the application.

- **Coordinator** — In multi-beneficiary grants, the beneficiaries participate as consortium (group of beneficiaries). They will have to choose a coordinator, who will take care of the project management and coordination and will represent the consortium towards the granting authority. In mono-beneficiary grants, the single beneficiary will automatically be coordinator.
- **Affiliated entities** — Applicants may participate with affiliated entities (i.e. entities linked to a beneficiary which participate in the action with similar rights and obligations as the beneficiaries, but do not sign the grant and therefore do not become beneficiaries themselves). They will get a part of the grant money and must therefore comply with all the call conditions and be validated (just like beneficiaries); but they do not count towards the minimum eligibility criteria for consortium composition (if any).
- **Associated partners** — Applicants may participate with associated partners if their participation is in the EU interest (i.e. partner organisations which participate in the action but without the right to get grant money). They participate without funding and therefore do not need to be validated.
- **Consortium agreement** — For practical and legal reasons it is recommended to set up internal arrangements that allow you to deal with exceptional or unforeseen circumstances (in all cases, even if not mandatory under the Grant Agreement). The consortium agreement also gives you the possibility to redistribute the grant money according to your own consortium-internal principles and parameters (for instance, one beneficiary can reattribute its grant money to another beneficiary). The consortium agreement thus allows you to customise the EU grant to the needs inside your consortium and can also help to protect you in case of disputes.

- **Balanced project budget** — Grant applications must ensure a balanced project budget and sufficient other resources to implement the project successfully (*e.g. own contributions, income generated by the action, financial contributions from third parties, etc*). You may be requested to lower your estimated costs, if they are ineligible (including excessive).
- **No-profit rule** — Grants may NOT give a profit (i.e. surplus of revenues + EU grant over costs). This will be checked by us at the end of the project.
- **No double funding** — There is a strict prohibition of double funding from the EU budget (except under EU Synergies actions). Outside such Synergies actions, any given action may receive only ONE grant from the EU budget and cost items may under NO circumstances declared to two different EU actions.
- **Completed/ongoing projects** — Proposals for projects that have already been completed will be rejected; proposals for projects that have already started will be assessed on a case-by-case basis (in this case, no costs can be reimbursed for activities that took place before the project starting date/proposal submission).
- **Combination with EU operating grants** — Combination with EU operating grants is possible, if the project remains outside the operating grant work programme and you make sure that cost items are clearly separated in your accounting and NOT declared twice (see [AGA — Annotated Model Grant Agreement, art 6.2.E](#)).
- **Multiple proposals** — Applicants may submit more than one proposal for *different* projects under the same call (and be awarded a funding for them).  
Organisations may participate in several proposals.  
BUT: if there are several proposals for *very similar* projects, only one application will be accepted and evaluated; the applicants will be asked to withdraw one of them (or it will be rejected).
- **Resubmission** — Proposals may be changed and re-submitted until the deadline for submission.
- **Rejection** — By submitting the application, all applicants accept the call conditions set out in this this Call Document (and the documents it refers to). Proposals that do not comply with all the call conditions will be **rejected**. This applies also to applicants: All applicants need to fulfil the criteria; if any one of them doesn't, they must be replaced or the entire proposal will be rejected.
- **Cancellation** — There may be circumstances which may require the cancellation of the call. In this case, you will be informed via a call or topic update. Please note that cancellations are without entitlement to compensation.
- **Language** — You can submit your proposal in any official EU language (project abstract/summary should however always be in English). For reasons of efficiency, we strongly advise you to use English for the entire application. If you need the call documentation in another official EU language, please submit a request within 10 days after call publication (for the contact information, see *section 12*).

## **Annex 1**

### **Technological readiness levels**

Where the call conditions require a specific Technology Readiness Level (TRL), the following definitions apply, unless otherwise specified:

TRL 1 — Basic principles observed

TRL 2 — Technology concept formulated

TRL 3 — Experimental proof of concept

TRL 4 — Technology validated in a lab

TRL 5 — Technology validated in a relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 6 — Technology demonstrated in a relevant environment (industrially relevant environment in the case of key enabling technologies)

TRL 7 — System prototype demonstration in an operational environment

TRL 8 — System complete and qualified

TRL 9 — Actual system proven in an operational environment (competitive manufacturing in the case of key enabling technologies, or in space)



## Annex 2

### Evaluation form questions

#### Excellence (5 points)

Extent to which the proposal matches the themes, priorities and objectives of the call.

Clarity and consistency of project, objectives and planning.

- Are the objectives of the proposal Specific, Measurable, Achievable, Relevant and Time bound (SMART)?

Extent to which the proposed work is ambitious and goes beyond the state of the art.

- To what extent do the applicants demonstrate their knowledge of the international state-of-the-art?
- To what extent the proposed work is ambitious and innovative (does it include novel concepts and/or novel approaches)?

Soundness of the proposed methodology, including the underlying concepts, models, assumptions, inter-disciplinary approaches

- Are the proposed methods and techniques clearly described? Is the scientific and technical feasibility of the proposed work, convincingly addressed?
- Do the initial and final technology readiness levels (TRL) meet the requirements of the call?

#### Impact (5 points)

Viability of the pathways to achieve the expected outcomes and impacts specified in the call, and the likely scale and significance of the contributions from the project.

- Are there relevant and substantial expected benefits for European Coal/Steel sector? Are their scale and significance quantified and credible?
- What are the expected wider scientific, economic, environmental and/or societal effects of the project? Are their scale and significance quantified and credible?

Suitability and quality of the measures to maximise the expected outcomes and impacts, as set out in the dissemination and exploitation plan, including communication activities.

- Are the target groups, potential users, stakeholders, and multipliers clearly identified and described?
- Are the proposed communication and dissemination measures suitable for the project, ambitious and of good quality?
- Are the exploitation measures to maximise the expected outcomes and impacts adequately and convincingly addressed?

#### Quality and efficiency of the implementation (5 points)

Technical quality. Logical links between the identified problems, needs and solutions proposed (logical frame concept). Methodology for implementing the project (concept and methodology, management, procedures, timetable, risks and risk management, monitoring and evaluation). Feasibility of the project within the proposed time frame.

Quality and effectiveness of the work plan, assessment of risks, and appropriateness of the effort assigned to work packages, and the resources overall.

- Are the work packages, allocation of tasks, milestones, deliverables clearly described and appropriate?
- Is the overall schedule suitable for achieving the project objectives?
- Are claimed financial resources well defined and appropriate? Are the subcontracted tasks justified?
- Are the risks related to the implementation of the project adequately identified? Are the mitigation measures appropriate?

Quality of the consortium and project teams. Appropriate procedures and problem-solving mechanisms for cooperating within the project teams and consortium. Capacity and role of each participant, and the extent to which the consortium as a whole brings together the necessary expertise.

- Is the quality of the consortium adequate for achieving the project objectives?
- Is the interaction of the partners clearly defined and functional to achieving the project objectives?
- Do individual partners have the necessary operational capacity to carry out the proposed action?