PARTNERSHIP FICHE: Clean Steel - Low Carbon Steelmaking

**MISSION AND VISION STATEMENT**

The Clean Steel Partnership (CSP) is aligned with the EU’s goal and policies to achieve climate neutrality by 2050 – the European Green Deal, the Clean Planet for All strategy and the Paris Agreement. It will thus contribute to fighting climate change and moving towards climate neutrality by 2050.

CSP will develop lean CO₂ technologies, and test these at large scales until 2030. These technologies are required to reduce CO₂ from EU steel production by 80-95% compared to 1990 levels, ultimately leading to climate neutrality.

CSP will ensure a coordinated, sustainable approach across stakeholders, technologies, production routes and countries.

CSP nurtures the long-term vision of supporting the European leadership in the transformation of the steel industry into a climate neutral sector while preserving the competitiveness and viability of the EU steel industry making sure that EU production will be able to meet the growing demand for steel products.

**KEY FACTS AND FIGURES**

- **Horizon Europe Pillar and Cluster:** Pillar II – Cluster 4: Digital, industry and space
- **Type of partnership:** Co-programmed
- **Coordinating entity:** European Steel Technology Platform (ESTEP)
- **Total estimated budget:** EUR 1.7 bn
- **EU commitments:** EUR 700 m
- **Partners’ commitments:** Up to EUR 1 bn
- **Predecessor under Horizon 2020:** The Clean Steel Partnership is a new partnership

**FIND OUT MORE**

[https://www.estep.eu/](https://www.estep.eu/)

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PARTNERSHIP FICHE: Clean Steel - Low Carbon Steelmaking

PARTNERSHIP SPECIFIC IMPACT PATHWAY (PSIP)

CLEAN STEEL - LOW CARBON STEELMAKING

GREEN, CIRCULAR AND DIGITAL FUTURE IN EUROPE

SUSTAINABLE INDUSTRY, LEADING TECHNOLOGY AND INNOVATIVE INFRASTRUCTURE

COMPETITIVE INDUSTRY MEETING GROWING STEEL DEMAND

DEVELOPMENT AND DEPLOYMENT OF INNOVATIVE GREEN AND DIGITAL TECHNOLOGIES

MAINTAIN GLOBAL MARKET SHARE POSITION

EU STEEL INDUSTRY GROWTH, MARKET LEADER IN GREEN STEEL, JOB CREATION

COLLABORATION WITH OTHER PARTNERS AND PROGRAMMES

STRENGTHEN THE GLOBAL COMPETITIVENESS OF THE EU STEEL INDUSTRY

INTEGRATE NEW STAKEHOLDERS

REDUCE TIME TO MARKET WITH HIGH READINESS LEVEL TECHNOLOGIES

ENABLE GREEN STEEL PRODUCTION, ENHANCE RECYCLING OF STEEL SCRAP

ADVANCED STEEL PRODUCTS FOR THE TRANSFORMATION OF SOCIETY TO REACH CARBON NEUTRALITY

UPSKILLED STEEL WORKFORCE

INCREASED VISIBILITY AT EU, NATIONAL AND REGIONAL LEVEL

DEPLOYABLE TECHNOLOGIES TO IMPROVE RESOURCE EFFICIENCY AND DIGITALISATION, AND REDUCE CO2 EMISSIONS

LARGE DEMONSTRATION PROJECTS

MULTI-STAKEHOLDER INVOLVEMENT (STEEL PRODUCERS, RESEARCHERS, EQUIPMENT PROVIDERS, ENTREPRENEURS, SMES)

NETWORKING, BROKERAGE AND COLLABORATION EVENTS

TECHNOLOGY KNOW-HOW TRANSFER AND TRAINING TO WORKFORCE

INCREASE AVAILABILITY OF FINANCIAL RESOURCES
### PARTNERSHIP'S KEY PERFORMANCE INDICATORS

<table>
<thead>
<tr>
<th>KPI NAME</th>
<th>UNIT OF MEASUREMENT</th>
<th>BASELINE</th>
<th>TARGET 2023</th>
<th>TARGET 2025</th>
<th>TARGET 2027</th>
<th>AMBITION &gt;2027</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RESOURCES (INPUT), PROCESSES AND ACTIVITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel industry involvement – financial</td>
<td>% of project budget to steel producers (average)</td>
<td>new</td>
<td>&gt;50%</td>
<td>&gt;50%</td>
<td>&gt;50%</td>
<td>N/A</td>
</tr>
<tr>
<td>Steel industry involvement – inclusiveness</td>
<td>% of CO2 represented by CSP project partners1</td>
<td>new</td>
<td>&gt;50%</td>
<td>&gt;60%</td>
<td>&gt;85%</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>R&amp;D collaboration science-EU steel companies</td>
<td># external research stays funded by the Partnership</td>
<td>new</td>
<td>N/A</td>
<td>&gt;5 in 4 technology fields</td>
<td>N/A</td>
<td>&gt;10 in 3 technology fields</td>
</tr>
<tr>
<td>Joint calls with other partnerships</td>
<td># joint calls</td>
<td>new</td>
<td>N/A</td>
<td>Min 2</td>
<td>N/A</td>
<td>Min 5</td>
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<tr>
<td><strong>OUTCOMES</strong></td>
<td></td>
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<tr>
<td>Energy use per tonne</td>
<td>%</td>
<td>TBD</td>
<td>N/A</td>
<td>-5% at TRL7</td>
<td>N/A</td>
<td>-10% at TRL8</td>
</tr>
<tr>
<td>CO2 capture for CCU/CCS</td>
<td>% capture rate</td>
<td>TBD</td>
<td>N/A</td>
<td>90% at TRL6</td>
<td>N/A</td>
<td>95% at TRL8</td>
</tr>
<tr>
<td>Scrap recycling</td>
<td>% low quality scrap input share</td>
<td>TBD</td>
<td>N/A</td>
<td>+25% at TRL6</td>
<td>N/A</td>
<td>+50% at TRL8</td>
</tr>
<tr>
<td>Breakthrough in technology building blocks</td>
<td>% projects TRL7</td>
<td>TBD</td>
<td>N/A</td>
<td>Min. 50%</td>
<td>N/A</td>
<td>Min. 85% (Min. 75% TRL8)</td>
</tr>
<tr>
<td>Upskilled labour force</td>
<td># dedicated programmes</td>
<td>0</td>
<td>N/A</td>
<td>Min. 1</td>
<td>N/A</td>
<td>Min. 3</td>
</tr>
<tr>
<td><strong>IMPACTS</strong></td>
<td></td>
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<tr>
<td>EU market share clean steel products</td>
<td>% of clean steel out of total EU steel demand</td>
<td>N/A</td>
<td>N/A</td>
<td>Acceptance of definition of clean steel and its products</td>
<td>TBD</td>
<td>Start of roll-out of clean steel and its products</td>
</tr>
<tr>
<td>Global market share EU technology providers</td>
<td>% growth</td>
<td>2020</td>
<td>N/A</td>
<td>+5%</td>
<td>N/A</td>
<td>+10%</td>
</tr>
<tr>
<td>Gross Added Value clean steel production</td>
<td>% growth</td>
<td>2020</td>
<td>N/A</td>
<td>+1%</td>
<td>N/A</td>
<td>+2% in 2030</td>
</tr>
<tr>
<td>CO2 emission reduction</td>
<td>t CO2e / t CO2e_1990</td>
<td>1990</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-55% in 2030</td>
</tr>
</tbody>
</table>

1 This % indicates the share of CO2 from CSP project partners in the overall CO2 emissions of the steel industry in the EU
SYNERGIES WITH OTHER EUROPEAN AND NATIONAL INITIATIVES

SYNERGIES: STORY 1
Additionality of the Clean Steel Partnership's is envisaged to be realised through a high degree of openness and transparency, and seek to attract all relevant stakeholders to participate in the wider framework. This is done via various measures, such as yearly workshops, a dedicated online presence, and thematic and networking events. Thereby, the partnership will ensure the broad and representative participation of players in the EU steel value chain and those connected to it.

In 2021, ESTEP organised two brokerage events for CSP's members in view of the 2021 calls for funding applications for Horizon Europe and the Research Fund for Coal and Steel frameworks. Focus group workshops on low carbon and energy efficiency, and the circular economy took place.

SYNERGIES: STORY 2
Enablers and support actions on behalf of the CSP will include the creation of synergies with EU and national programmes that enable the upskilling of the steel workforce, activities aiming at fostering R&D&I collaboration between EU companies participating in the clean steel value chain, as well as broader initiatives supporting the creation of a new market for clean steel products.

A way forward will be the launch of several multi-partner projects (targeting at least three beneficiaries and engaging at least three EU Member States) to achieve the objectives of the CSP.

Due to the collaboration among steel producers, reasonable synergies are expected compared to the company-by-company approach, thus reducing the investment need.

SYNERGIES: STORY 3
For the partnership to foster additionality, it will collaborate with other partnerships and programmes, for example:

- Processes4Planet: CSP and Processes4Planet have been working closely to align R&D objectives and plans (joint declaration);
- Clean Hydrogen: setting the objectives to accelerate the market entry of nearly-zero GHG-emission hydrogen-based technologies across energy, transport, and industrial end-users (joint declaration);
- Artificial Intelligence, Data and Robotics;
- Made in Europe.
OVERVIEW OF MEMBERS

MEMBERS PER TYPE

- **INDUSTRY**: Other Industrial and/or profit Private organisation
- **UNIVERSITY**: University and other higher education organisations
- **RESEARCH**: Public research organisation (including international research organisation as well as private research organisation controlled by a public authority)
- **OTHERS**: Non-profit, associations, state companies etc.

GEOGRAPHICAL COVERAGE

Numbers = number of partners in the country

Total number of partners: 54