



GREENSTEEL
FOR EUROPE

FUNDING OPPORTUNITIES TO DECARBONISE THE EU STEEL INDUSTRY

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Executive summary

Climate neutrality by 2050 is one of the main policy priorities of the European Union (EU), as outlined in the December 2019 European Commission (EC) communication on the **European Green Deal** (EGD). In addition to being the EU's response to challenges related to climate and the environment, the EGD is also a growth strategy that aims to **transform the EU into a fair and prosperous society**, with a modern, resource-efficient and competitive economy.

The transition to a climate-neutral society is not only an urgent challenge but also an **opportunity to build a better future for all economic sectors**. By aligning actions in critical industrial areas through policy, the EC can lead the way to achieving climate neutrality while continuing to drive new business models, guiding private investment, especially in new technological solutions. Developing such solutions, however, will not be easy.

The **Covid-19 health crisis** has hit the European economy hard, causing a sharp technological slowdown, a fall in the EU's gross domestic product (GDP) and an unprecedented situation of uncertainty. The severe lockdown restrictions imposed to contain the spread of the virus have slowed down the EU's industry, supply chains and production lines, with serious economic implications. In particular, consumption has dropped as jobs have been lost, income has fallen and the public's appetite for buying has declined because of confinement measures closing shops.

Energy-intensive industries (EIs), among others, the steel sector provide materials and goods that are necessary for the European way of life, and significantly contribute to GDP and employment. EIs require a considerable amount of energy, directly or indirectly producing greenhouse gases (GHGs), and are responsible for at least 15% of the EU's emissions. Carbon dioxide (CO₂), the GHG most relevant to the steel industry, is difficult to mitigate with conventional technologies.

Consequently, **research and innovation** (R&I) are fundamental for the development of 'breakthrough technologies' that would allow for compliance with the climate change targets of the EGD while maintaining global competitiveness. Creating the conditions for such innovations at the industrial and commercial scale, however, requires political support and important investments by industry. In other words, a **coordinated approach** is needed to change production routes, trade and consumption. This implies an unprecedented technological transformation and substantial funding. To bolster this effort and foster innovative approaches, in May 2020, the EC presented a wide-ranging package for the period 2021-27 combining the future **multiannual financial framework** (MFF, €1,074.3 B) and a specific recovery effort under **Next Generation EU** (NGEU, €750 B).

The purpose of this report is to analyse all main, relevant financial instruments for an **overview of the funding available to reach the zero GHG emissions target in the steel sector set by the EU for 2050**. In particular, this report considers a wide range of programmes relevant to the steel sector, both public and private: **25 EU programmes** (19 public and 6 private), **24 private funding opportunities** (mainly from banks, including both conventional instruments and green bonds), and **81 national and regional instruments** (from 11 countries). The member states involved in this research and mapping exercise (Austria, Belgium, Finland, France, Germany, Italy, Luxembourg,

the Netherlands, Poland, Spain and Sweden) account for **at least 90% of the EU steel production and 80% of CO₂ emissions** from all EU steel plants.

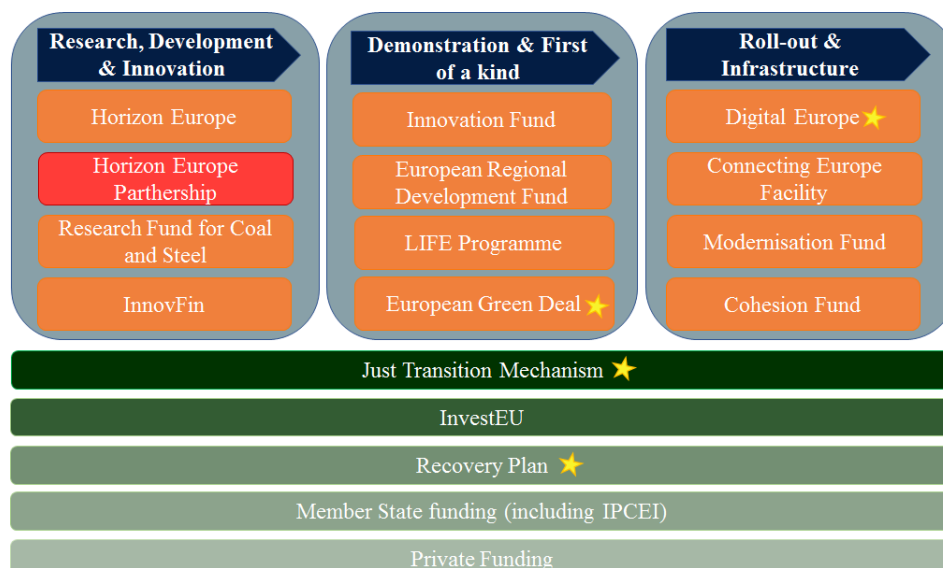
EU public funding opportunities

Of all the public funding instruments available at European level, the following are significant:

- **Horizon Europe (HEU, €100 B)**, the EU's main funding programme for R&I;
- the **Clean Steel Partnership (CSP)**, the key alliance for CO₂ emission reduction in the steel sector, supported by the EU with funding from HEU;
- the **Research Fund for Coal and Steel (RFCS)**, providing funding for generally smaller R&I breakthrough projects in clean steelmaking;
- the **LIFE programme**, an environment and climate initiative that may provide additional support to the transformation of EU production and distribution, including the steel sector, into a clean, circular, energy-efficient, low-carbon and climate-resilient economy;
- the **Innovation Fund (IF)**, the funding programme for the demonstration of innovative low-carbon technologies; and
- the **European Green Deal Investment Plan (EGDIP)**, the **Just Transition Mechanism (JTM)** and various other EU instruments, not only for research, development and innovation (R&D&I) but also for first-of-a-kind and infrastructure and skills projects.

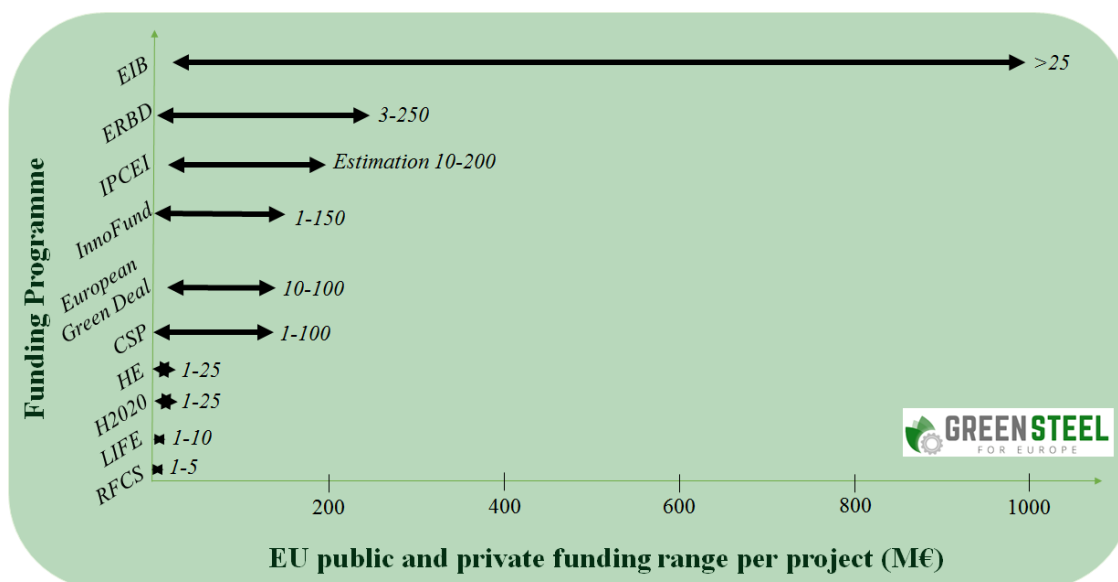
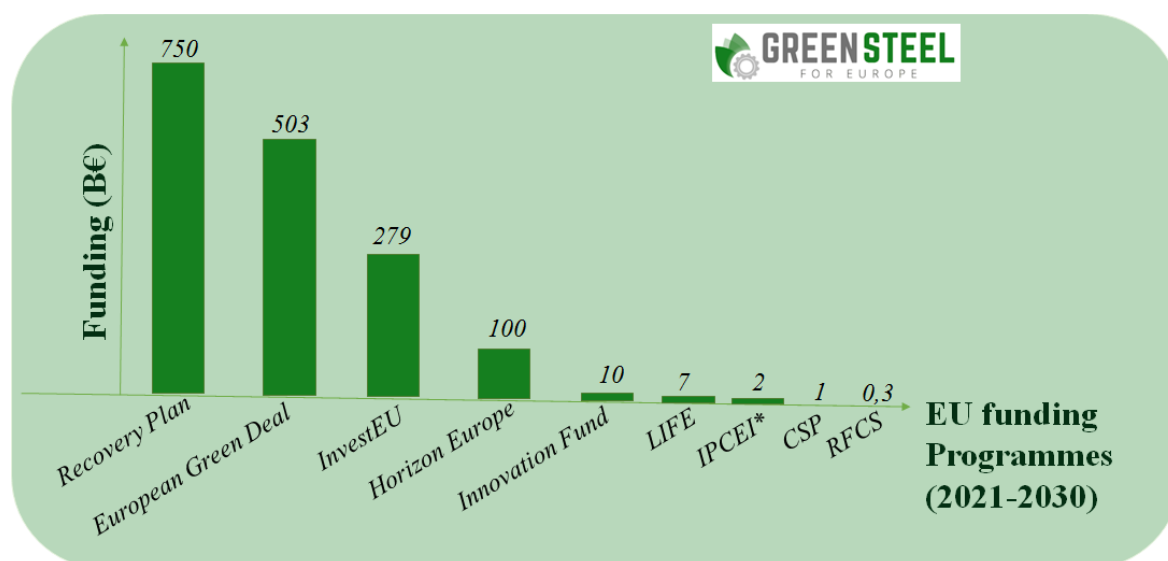
The **funding programmes dedicated to the specific investment needs of the EU steel industry** (see GREENSTEEL D2.2 Report on Investment needs) are not sufficient. Overall, only about €2 B of available EU public funding would be usable for activities aiming to reduce CO₂ emissions in the steel sector for the period 2021-30. An overview of the EU programmes supporting steel sectors is sketched in Figure 1.

Figure 1 EU programmes supporting the decarbonisation of the steel industry



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Figure 2 Top: Funding available per programme (2021-30). Down: Estimated range of funding available per project



The above-mentioned estimate does not take into account the possible implementation of an **important project of common European interest (IPCEI)** in the steel sector, which is still under discussion. Based on the existing IPCEIs (microelectronics and batteries), additional funding could total around **€2 B**.

Moreover, additional funds could come from initiatives that are either new or under development, such as the **EGDIP**, the JTM and InvestEU. The **EGDIP** has a total budget of **€503 B** (of which **InvestEU** amounts to **€279 B**).

As an example, Table 1 shows an overview of European public funding opportunities.

Table 1: Overview of European public funding opportunities

EU Programme	Scope and objective	Funding available in total	Estimation of funding available for decarbonisation of steel	Beneficiaries	Type of action	Blending with other instruments	TRL
Horizon Europe (HEU)	Driving economic growth and creating jobs	€100 B (2021-27)	€80 M (2021-30)	Undertakings and individuals	R&D&I RIA, IA, CSA	CSP, RFCS, IF, LIFE	1-9
Clean Steel Partnership (CSP)	Supporting the decarbonization of the steel industry	€700 M (2021-27)	€975 M (2021-30)	Undertakings and individuals	R&D&I small-scale demonstration projects	RFCS, HEU, IF, LIFE	5-8
Research Fund for Coal and Steel (RFCS)	Supporting R&I in coal and steel sectors. Projects cover: (i) production processes; (ii) application, utilisation and conversion of resources; (iii) safety at work; (iv) environmental protection; (v) <u>reduction of CO₂ emissions from steel production</u>	€ 40 M per year (€30 M for steel)	€300 M (2021-30)	Undertakings and individuals	R&D&I Research projects (up to 60%), pilot and demonstration projects (up to 50%) and accompanying measures (up to 100%)	HEU, CSP, IF, LIFE	3/5-7
Innovation Fund (IF)	Supporting the demonstration of innovative low-carbon technologies and promoting GHG emission avoidance	€10 B (2021-30)	€500 M (for 20 different sectors) (2021-30)	EII, renewable energy, IT	Demonstration & first-of-a-kind big (€>7.5 M) or small (€<7.5 M) projects. Big projects:	HEU, CSP, RFCS, LIFE	7-9

EU Programme	Scope and objective	Funding available in total	Estimation of funding available for decarbonisation of steel	Beneficiaries	Type of action	Blending with other instruments	TRL
					up to 60% of additional costs related to innovative technologies; small projects: up to 60% of CAPEX		
LIFE	Promoting environment and climate actions	€5.4 B (2021-27)	€50 M (2021-30)	Climate, environment, nature	Demonstration & first-of-a-kind projects	HEU, CSP, RFCS, IF	6-9
European Green Deal Investment Plan (EGDIP)	Helping the most vulnerable regions deal with the socio-economic impacts of the green transition	€503 B (2021-27)	Currently under evaluation at EU level	Climate, environment	Demonstration & first-of-a-kind projects	HEU, CSP, RFCS, IF	7-9
Digital Europe (DE)	Building the strategic digital capacities in the EU and facilitating the wide deployment of digital technologies	€9.2 B (2021-27)	Not directly contributing to CO ₂ emission reduction	Undertakings and individuals	Roll-out infrastructure & digitisation projects	Draft orientation	Draft orientation
Connecting Europe Facility (CEF)	Promoting growth, jobs and competitiveness through targeted infrastructure investment at European level (to support the development	€28.7 B (2021-27)	Not directly contributing to CO ₂ emission reduction	Undertakings and individuals	Roll-out infrastructure & projects in energy, telecom and transport sectors	CF	Infrastructure networks

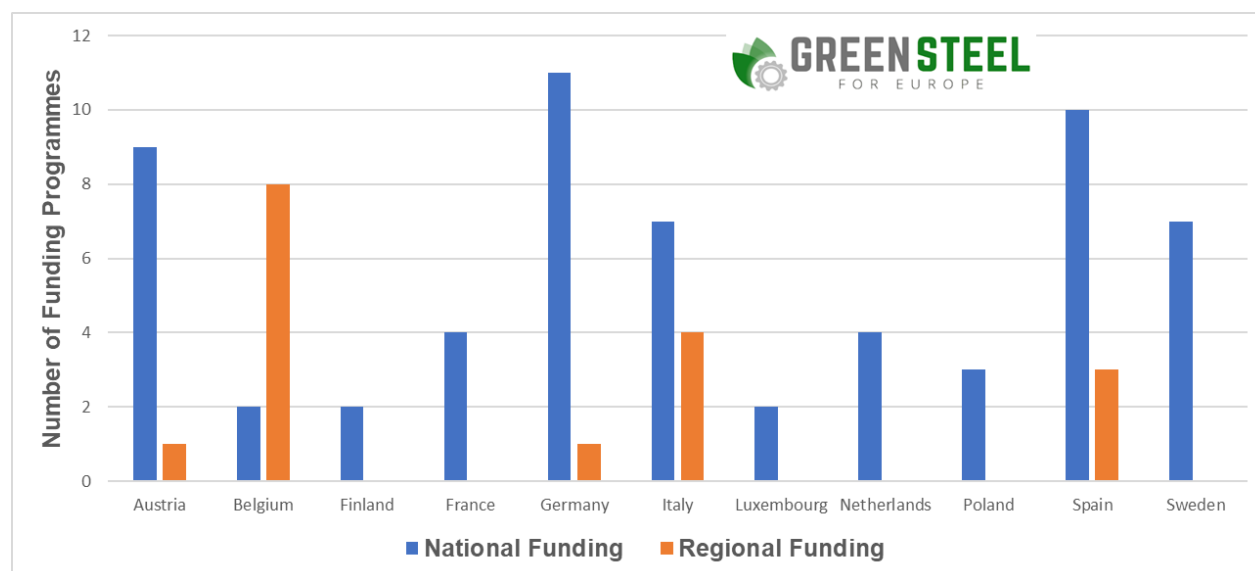
EU Programme	Scope and objective	Funding available in total	Estimation of funding available for decarbonisation of steel	Beneficiaries	Type of action	Blending with other instruments	TRL
	of high-performing, sustainable and efficiently-interconnected trans-European networks in the fields of transport, energy and digital services)						
Erasmus+	Supporting education, training, youth and sport in Europe	€14.7 B (2021-27)	Not directly contributing to CO ₂ emission reduction	Undertakings and individuals	Projects aimed at skills, mobility, cooperation, and policy reform	Not applicable (co-financing up to 100%)	Education, skills and training
ERA-NET	Supporting the preparation and establishment of networking structures, and the design, implementation and coordination of joint activities	Depending on the amount allocated by each region and the EC	Indirect contribution to CO ₂ emission reduction	Depending on the specific call	SMEs, depending on EC and regional criteria	EC	Depends on the specific call
SME Instrument	Supporting high-risk, high-potential SMEs to develop and bring to the market new products, services and business models that could drive economic growth	1.2 B€	Estimated not directly contributing to CO ₂ emission reduction	SMEs	Dedicated to SMEs COSME, INNOSUP, EUROSSTAS, SME instruments	Regions	4-9

EU Programme	Scope and objective	Funding available in total	Estimation of funding available for decarbonisation of steel	Beneficiaries	Type of action	Blending with other instruments	TRL
Important project of common European interest (IPCEI)	Providing a contribution to Union objectives and significant impact on economic growth, sustainability or value creation across the EU	Agreement among at least three MSs	Around €2 B (based on the two existing IPCEI for R&D)	By sector	R&D&I	National funding, structural funds and central EU funding programmes	5-9

Source: authors' own composition.

Figure 3 below shows the distribution of the 81 national and regional public instruments analysed by member states and region. The figures demonstrate the **interest of member states and regions in supporting industrial transformation**. The number of national instruments is consistently higher than that of regional ones. However, regions also are demonstrating growing support. That said, **rules tend to differ significantly**.

Figure 3: National & regional funding programmes supporting the decarbonisation of steel industry



Source: authors' own calculation.

Quite often, national and regional programmes are insufficiently coordinated in terms of scope, timeline and funding availability. Long-term visibility and stability must also be ensured to allow for blending with the new set of EU initiatives, in order properly to support CO₂ emission reduction in the steel sector.

Based on the information currently available on national and regional funds, **approximately €400 M** per year would be available for CO₂ emission reduction in the steel sector for all 11 European countries considered in the analysis for the period 2021-22. This amount is in addition to the amount cited above for EU instruments.

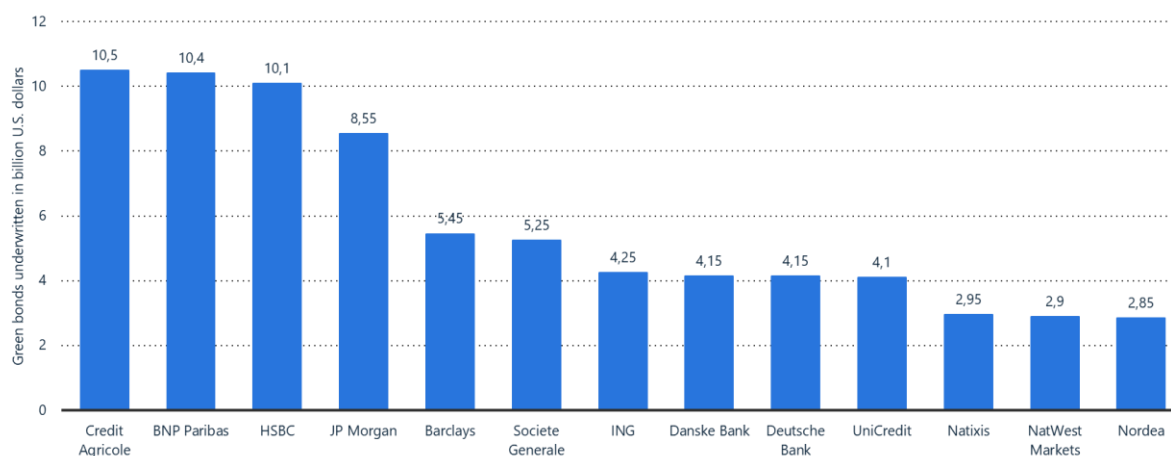
The report also present details on **private** instruments available at **the European, national and regional levels**, including from banks, highlighting, whenever possible, **synergies** such as:

- involvement of public and private investors, increasing the total amount of financing available to projects compared with support through grants only;
- greater and more extensive support to beneficiaries that may not be supported by a single grant at EU or national level, also taking into consideration state aid rules;
- risk reduction and bridging the so-called “innovation valley of death” (the gap between academic-based innovations and their commercial application in the marketplace); and
- better alignment of company interests with the successful outcome of the project.

In this context, every year all main **development banks** (World Bank, International Finance Corporation, European Bank for Reconstruction and Development, European Investment Bank,

Asian Development Bank and African Development Bank) **renew their commitment to sustainability by launching new green bond emission plans(see figure 4)**

Figure 4: Leading European banks for green bond underwriting in 2019, by value of bonds (B \$)



Source: *Climate Bonds Initiative – Statista.*

Sequencing is the possibility to continue sustaining an ongoing project through the same or a similar funding mechanism. Based on the information collected here, sequencing has not generally been highlighted as a key bottleneck to be addressed in the rules, either at the EU level or at national/regional levels.

In very few cases is sequencing regulated by rules associated with the funding source. Consequently, even though sequencing is important for supporting long-term technological development, the use of the tool depends much more on the specific technical nature of the project and its own evolution than on the detailed definition of rules for the funding instrument.

Conclusions

The 2050 climate stabilisation challenge can be met only if private capital is sufficiently supported by a consistent and coordinated framework of public funding opportunities at the EU, member state and regional levels. Both EU and national/regional financial support schemes for the decarbonisation of industrial installations must be made available at sufficient scale for the entire transition period from 2021 to 2050. In addition, the steel industry and other stakeholders will need to cooperate to overcome the technological and economic challenges they face with regard to the implementation of low-carbon production technologies.

However, the analysis of EU financial support conducted in the framework of this report has found that even by combining significant financial mechanisms—such as HEU, CSP, RFCS, LIFE and IF—only about **€2 B would be available as grants for CO₂ emission reduction in the steel sector for the period 2021-30**. This is, of course, a large amount of money but unfortunately far from enough to turn breakthrough technologies into technically achievable and economically viable solutions, which would allow the sector to do its part toward achieving the objective of a climate-neutral EU by 2050. In addition, based on currently available information, the analysis of national and regional funding instruments has found that **approximately €400 M per year would be available for reducing CO₂ emissions in the steel sector in the period 2021-22**, for all 11 of the European countries considered. These amounts are insufficient to meet the investment needs of the steel sector.