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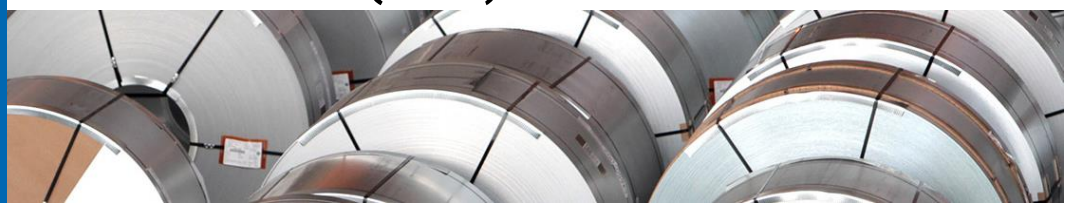
The European Steel Association

FACT SHEETS

REVISION OF THE ENVIRONMENTAL AND ENERGY AID GUIDELINES (EEAG)



FACT SHEET 1: ECONOMIC IMPACT OF THE EU STEEL INDUSTRY

(Based on the study by Oxford Economics)

The steel industry has had a longstanding presence in Europe and remains an important employer of skilled labour. Furthermore, the industry also supports significant activity and jobs in a range of other industries throughout the EU, as a result of the large amount of money spent on the materials and services used in the steel production process.

Crucially, steel makes a powerful contribution to the continent's standard of living, by forming a key input in the work of other industrial sectors. In turn, many of these customer industries produce items essential for the functioning of the wider EU economy.

In 2017, the European steel industry made a €25 billion direct contribution to the standard 'gross value added' measure of EU-wide production (hereafter referred to as GVA). However, the industry's total GVA impact that year, when supply chain and staff spending impacts are also included, was much higher, at €148 billion. This overall contribution exceeded the total GVA produced in the region of Berlin in 2017.

The steel industry directly employed around 328,000 workers across 22 member states in 2017. But its total contribution to employment in the EU-28, through all three channels of impact, was again much bigger at 2.6 million jobs. To put that in context, the industry's overall jobs impact is greater than the total number of people employed in each of Slovakia, Finland, and Ireland.

The steel sector's total contribution to EU GVA is 5.8 times its direct impact alone, meaning that for every €1 of value-added activity in the sector itself, a further €4.80-worth of work is supported elsewhere in the EU economy, due to supply chain connections and wage-funded expenditure. The corresponding ratio for employment is 7.9, meaning that for every job in the industry, nearly seven roles are supported elsewhere through these knock-on effects for demand. These ratios, known as 'multipliers', are very high by the standards of a typical manufacturing sector of this size.

The direct tax impact—taxes paid by steel companies and their employees in the course of their work—is estimated to have been €10 billion in 2017. The total tax impact, which also includes taxes on activity in the indirect (supply chain) and induced (staff spending) channels, was around six times that value, at €60 billion. The direct tax revenues alone would have been sufficient to cover the average wages of 250,000 full-time teaching and healthcare professionals across the European Union, with the total tax impact sufficient to fund 1.5 million such staff.

The four major customer sectors in the EU of the steel industry are the manufacture of fabricated metal products, mechanical machinery, and motor vehicles, together with construction. Across these four industries combined, total direct GVA amounted to €1.35 trillion in 2017, supporting more than 24 million jobs and generating just over €500 billion of tax revenues. Taking the indirect and induced impacts into account too, they contributed almost €3.4 trillion to EU GVA in total, supporting 62 million jobs and €1.35 billion of tax revenues.

Production of most of these industries' outputs would simply not be possible without the use of steel, or some alternative input performing essentially the same function. Across all four sectors combined, almost one-third of their additional economic impacts could be thought of as being 'enabled' by EU steel. So, in 2017, that value would have been €1.1 trillion in terms of GVA, associated with 19 million jobs and €430 billion of tax revenues.

EUROFER AISBL • Avenue de Cortenbergh, 172 • B-1000 Brussels • Belgium
+32 3 738 79 20 • mail@eurofer.be • www.eurofer.eu • EU Transparency Register: ID 93038071152-83

FACT SHEET 2: THE VERY HIGH CARBON LEAKAGE RISK OF THE EU STEEL INDUSTRY

(based on the study by Nera Consulting)

The steel sector (NACE code 2410) has been considered at risk of carbon leakage under EU ETS phase 3, both for direct and indirect costs.

The main raw materials used in the production process (iron ore, coke, and scrap) as well as the steel products are globally traded goods that can be easily transported. Hence, very small price differences play an important role on the market.

The bulk of carbon leakage in the steel sector occurs as a result of the slow but persistent loss of sales to the advantage of competitors who all operate in countries where there is no such internalisation of carbon costs. The most marginal sales in terms of contribution are the first to be lost, for instance in export markets. The resulting loss in sales volumes pushes up average fixed costs, thus reducing the contribution of the remaining sales, so that more business "falls off the cliff" as no longer being profitable. Thus, competitors from third countries progressively gain EU market share at the expense of EU producers' as an increasing proportion of the latter's' sales become marginal. Statistics on imports and exports of the last years provide indication of this trend, with the EU that became a net importer of steel finished products while traditionally it was a net exporter.

The main market characteristics that determine its very high exposure to carbon leakage are:

- Combination of both high trade and energy/electro intensity: according to the Commission data used for the post 2020 carbon leakage list the trade intensity is 25.7% and indirect electro-intensity is 1.414 kg CO2/€ GVA.
- Global overcapacity: the gap between global production and demand was 650 million tonnes in 2017, which is almost three times the European capacity of around 220 million tonnes. EU industry has reduced both capacity and production over the last decade. The EU market share in the total production decreased from 15% in 2008 to 9% in 2018.
- Exposure to international trade and unfair trade practices such as dumping: imports have been steadily increasing in volume and value since 2012 reaching the highest levels despite the measures implemented by the EU in reaction to such unfair trade practices. As a result of the combined effect of increasing imports and decreasing exports, the trade balance has worsened significantly. The EU became net importer in terms of quantities in 2013 and in terms of value in 2015.
- Low or negative profitability: the EBIT margin estimated with Eurostat figures remained between 1% and 2% in the period 2014-2016 (and was even negative in 4 out of the 6 preceding years). The steel sector is the third lowest for the ratio Gross Operating surplus/turnover among all (35) sectors addressed by the targeted consultation on indirect costs compensation.

FACT SHEET 3: UPDATED STEEL INDUSTRY ROADMAP TO 2050

(based on the techno-economic studies by Navigant and the Steel Institute VDEh)

The EU steel industry as a whole may reduce its direct and indirect CO_2 emissions by 75 to 80% in 2050 compared to 1990 level with a combination of technological pathways, including: hydrogen-based steelmaking, transformation of fossil-based steelmaking through process integration and capture and use of waste carbon and the enhancement of recycling of steel scrap and steel by-products. Carbon capture and storage is required in the transition phase, otherwise the above CO_2 reduction potential would be lower.

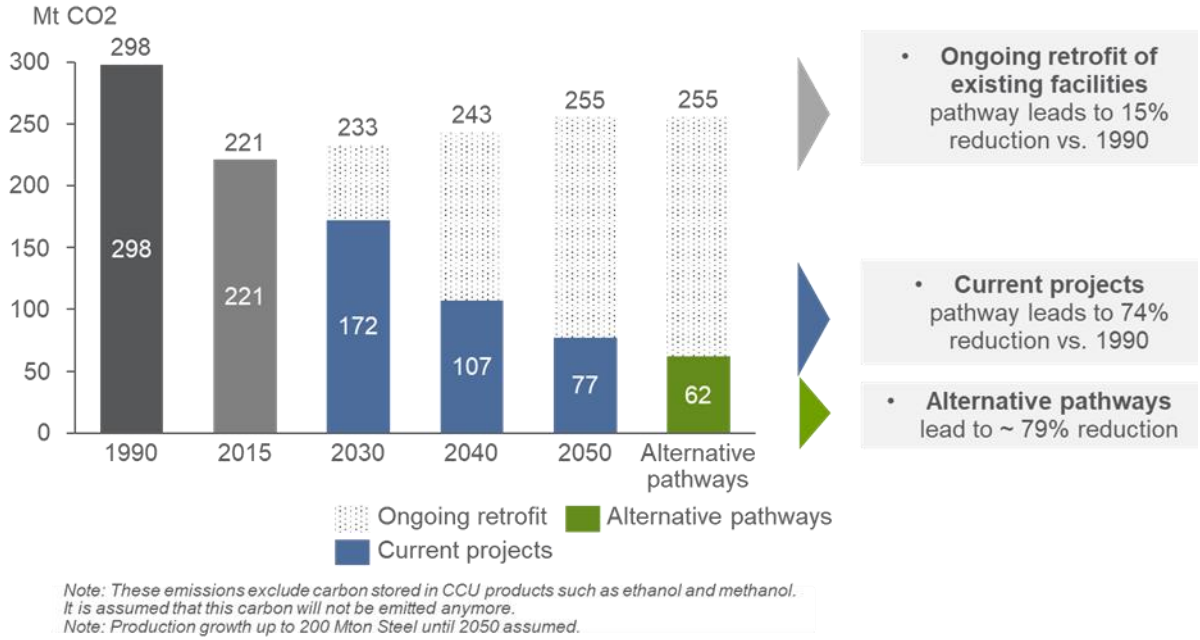


Figure 1: Emission reduction for the I&S sector overtime and relative to current and 1990 emissions

CO_2 emission reduction over 80% - even up to 95% - could be achieved by the steel industry as a whole if CO_2 free electricity and CO_2 neutral gas are available.

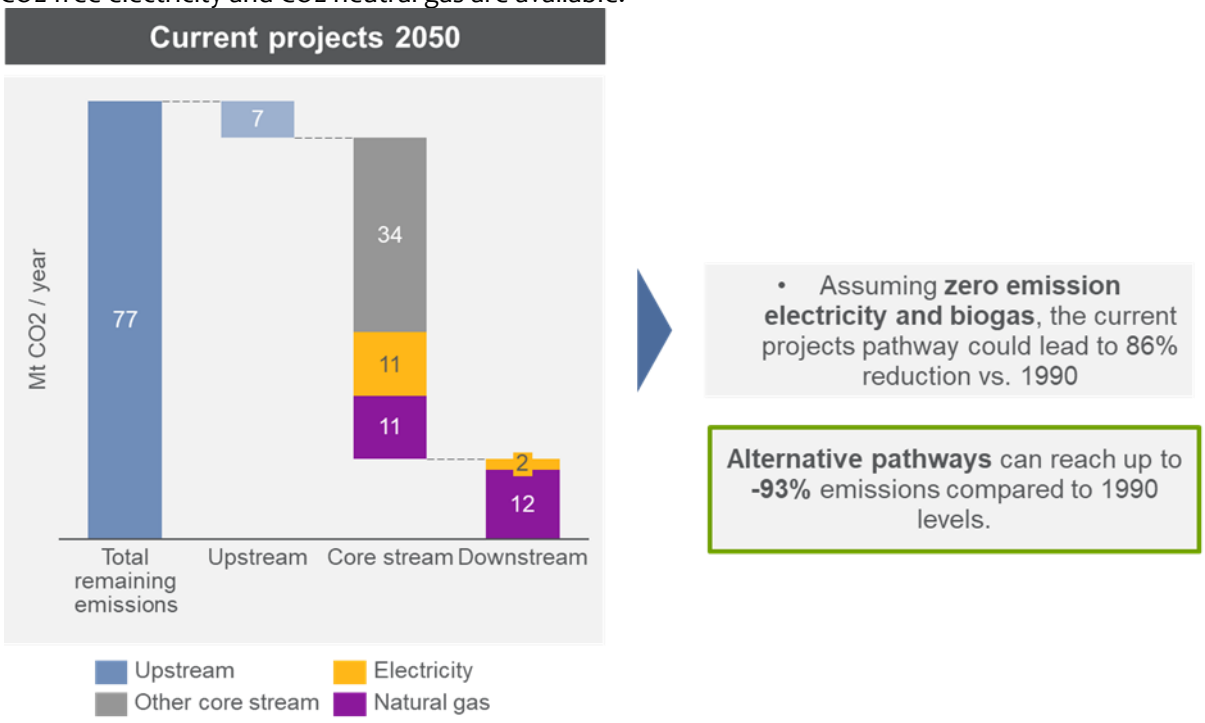


Figure 2: Split of remaining emissions of current projects pathway in upstream, core stream and downstream

This transformation requires important surrounding conditions are in place, namely availability of suitable raw materials (iron ore, scrap), low-CO_2 energy vectors (electricity and hydrogen) at competitive costs, related infrastructure and an adequate regulatory framework that allows the EU steel industry to stay competitive vis-à-vis global competitors with less strict environmental objectives. The EU steel industry would require about 400 TWh of CO_2-free electricity in 2050 for steel processes and annual production of about 5.5 Mt of hydrogen; this corresponds to more than 7 times its actual electricity purchase from the grid.

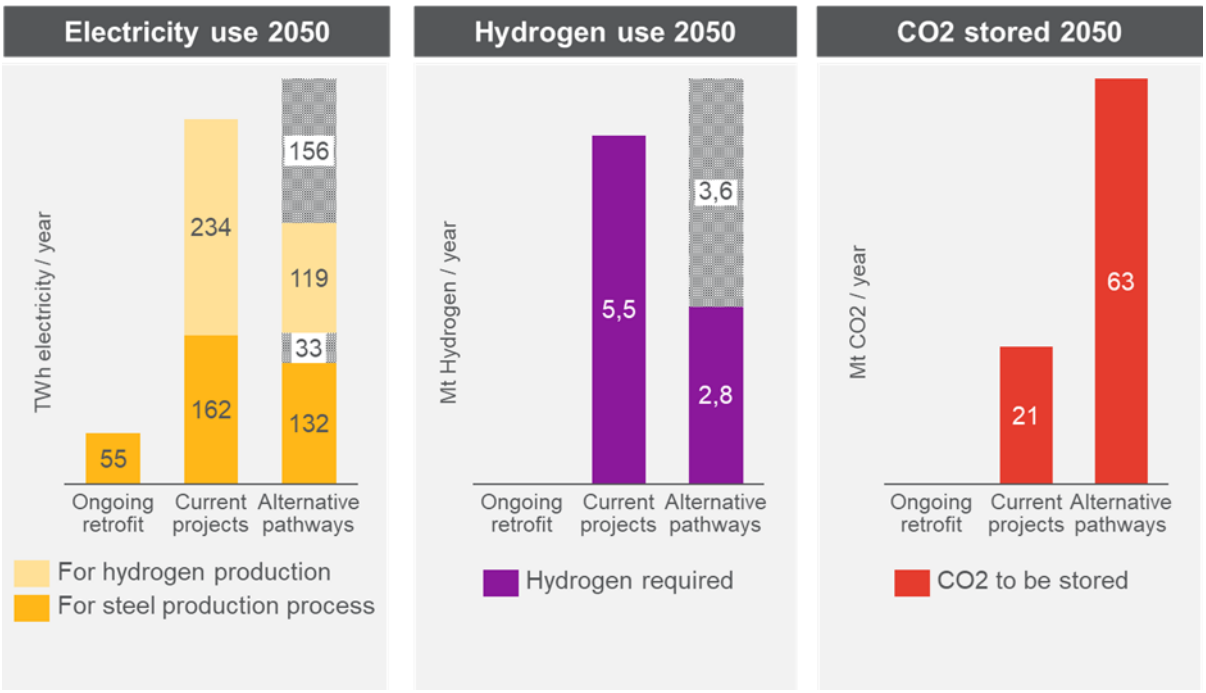


Figure 3: Projected demand for power purchased from the grid, hydrogen and CO_2 storage capacity in 2050

This transformation of the EU steel sector will entail high investment cost and lead to a significant increase in production costs. The total yearly costs of steel production in 2050 including OPEX and CAPEX are estimated to be between €80 and 120 billion. Note that cost number represent 2015 real values and do not include costs related to change of property, new energy infrastructure, additional permits, required innovation, demolition, scale-up costs and the like.

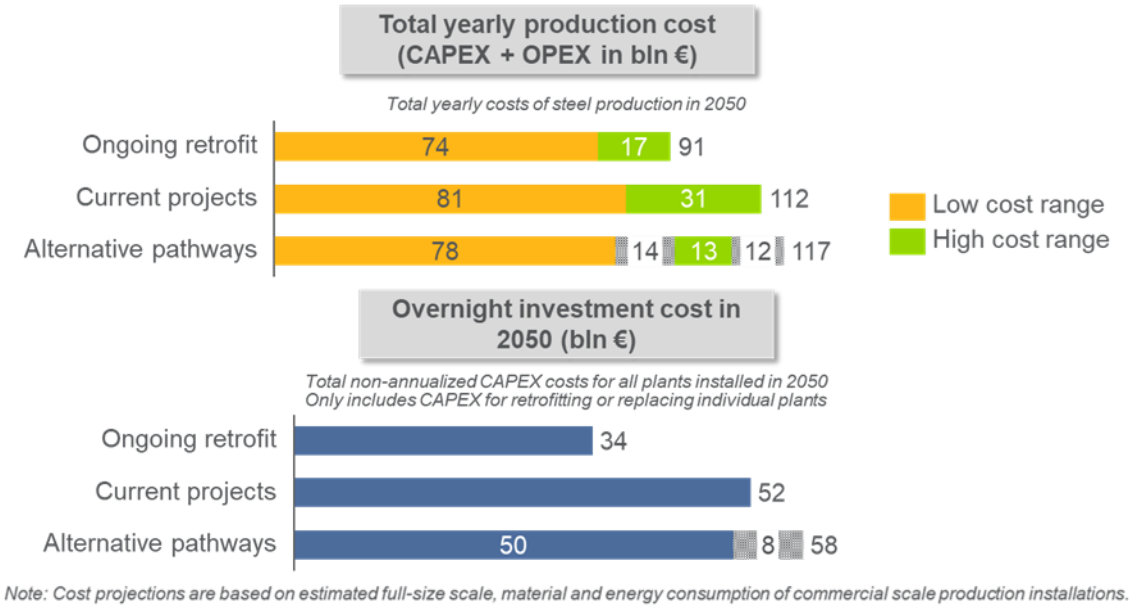


Figure 4: Total yearly production cost and overnight investment cost in 2050

The individual cost impact depends on production route and is significantly high for the primary steel production routes. The average steel production costs of all primary steel making routes could increase by about 35 to 100% from 2015 to 2050 compared to the production costs of the retrofitted Blast Furnace /Blast Oxygen Furnace route (BF/BOF). These values are significantly influenced by the expectation that the price for electricity and hydrogen production will fall until 2050.

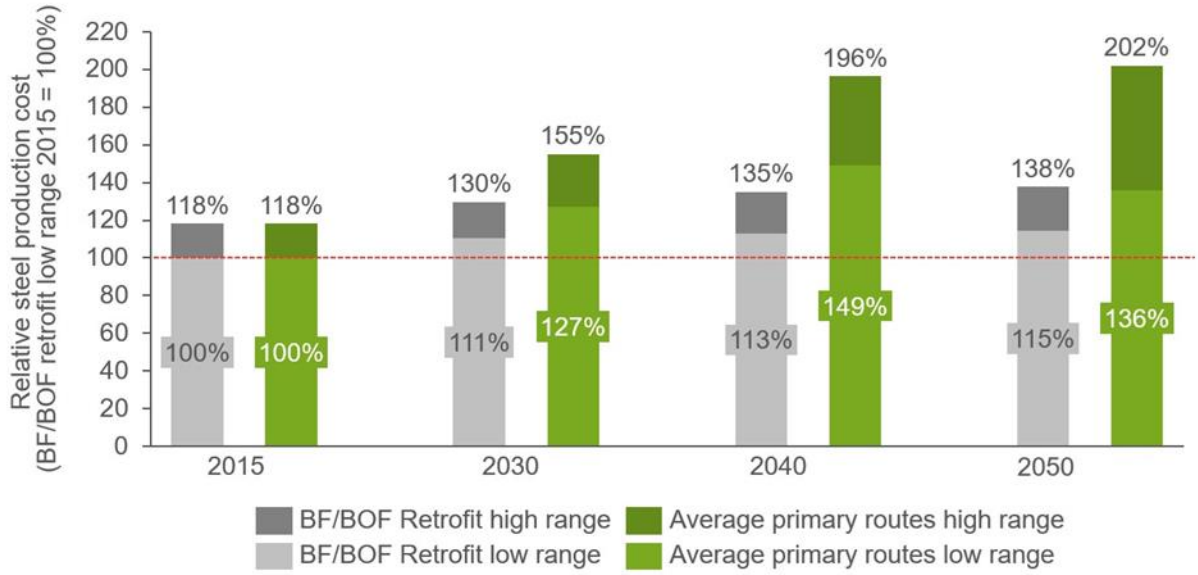


Figure 5: Comparison of average steel production cost of baseline and primary routes in current projects pathway