

Guidance paper

Using the standard EN 19694-2 and appropriate thresholds for the use of scrap for an EU Taxonomy fit for purpose

We need a taxonomy that will help raising funds for sustainable projects and support activities which will contribute to carbon neutrality in the EU by 2050

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Overview

Massive transformative investments are needed for the development, demonstration and scaling up of new CO₂-low technologies over a relatively short time period. The sustainable finance taxonomy should facilitate the transition and therefore maintain a flexible approach that prevents prescriptive and rigid categories which do not take the dynamic evolution of technology into account. The transition of the steel sector will not be linear, but will rather require step changes and investment spanning over several decades. **EUROFER has provided a detailed position on the EU taxonomy for sustainable finance in its contribution to the inception impact assessment on the EU taxonomy¹**, highlighting the following main requests for the technical screening criteria:

- The EU taxonomy should use genuinely an integrated lifecycle approach to take into account steel as an enabler for CO₂ mitigation in multiple value chains.
- The principles of standard EN 19694-2, developed with a mandate from the EU Commission, shall be used to assess relative performance instead of ETS benchmarks, which do not entail a lifecycle approach and are thus not suitable for the taxonomy purpose.
- Secure the eligibility of EAF steel production without excluding different steel qualities, like stainless steel, and high alloy steel² due to the proposed threshold of at least 90% scrap sourced iron content in final products.

¹ EUROFER contribution to inception impact assessment on EU taxonomy, October 2020

(https://www.eurofer.eu/assets/Uploads/20200421_EUROFER_Contribution_IIA_Taxonomy_Final-1.pdf)

² Definition following in accordance with Commission decision (2011/278/EU) of 27 April 2011 determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council

- Add CCU and CCS to the list of low carbon breakthrough technologies and take all sources of hydrogen - as well as from iron and steel production – into consideration.

We reiterate our call for consideration of the above requests and would like with this short paper to further clarify only two points: our request for using of the EN 19694-2 in place of the ETS benchmarks and for the modification of the threshold for the use of scrap in the technical criteria for the EU Taxonomy.

EN 19694-2 in place of ETS benchmarks

The steel value chain is a complex system of interconnected processes producing steel essentially via 2 complementary process routes:

- the primary production route based on Blast Furnace – Basic oxygen Furnace using iron ores, steel scrap, and mainly fossil based reduction chemicals and energy carriers (coke).
- the secondary production route based on Electric Arc Furnace using steel scrap and mainly electricity.

We would like to reiterate that, in order to understand and assess/evaluate the environmental impact of activities of the steel industry, the entire life cycle needs to be taken into consideration, this in line with Article 19 (g) of the regulation³. As part of a life cycle approach, it is key to assess the performance along the entire steel value chain, including all inter-connected steelmaking processes, in order to have consistent data and avoid misleading results which would compromise the existence of sustainable steel value chains in Europe.

ETS benchmarks are not able to evaluate the environmental impact of the activities of the steel industry as they do not consider the interconnected processes that make up the steel value chain. Therefore, EUROFER has been urgently calling for an effective use of the standard EN 19694-2⁴.

EN 19694-2 was developed with a mandate from the European Commission. Under mandate M/431⁵ of October 2008, a gap analysis of EN and ISO and international protocols was carried out. The results of this work indicated *“the need for further standards to facilitate and support the implementation and development of EU and international climate change policy actions”*.

As follow-up the mandate M/478⁶ of December 2010 was delivered by the Commission with the objective to *“create a European standard (one generic standard with sector-specific annexes) that*

³ Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0852&from=EN>)

⁴ EN 19694-2: Stationary source emissions - Greenhouse gas (GHG) emissions in energy-intensive industries – Part 2: Iron and steel industry (published in 2016)

⁵ Mandate M/431 – Mandate addressed to CEN to establish a programme of standards for assessing the greenhouse gas (GHG) emissions in energy-intensive industries (<https://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=refSearch.search&lang=en#>)

⁶ Mandate M/478 - Standardisation mandate to CEN, CENELEC and ETSI for the development of EU technical standards in the field of greenhouse gas emissions

will support policies and measures set up for moving towards a global low emission economy. [...] One main goal [of the standard] is to encourage performance improvements of industrial installations, e.g; by increasing efficiency and reducing emissions. GHG emissions standards, notably, are to play a prominent role in promoting EU enterprises' long term competitiveness and help seizing the opportunities of the green economy."

Under the mandate of the Commission, a generic standard was developed, including the part EN 19694-2 for steel, which sets out the CO₂ accounting rules and metrics aimed at carrying out an emissions assessment. This includes the CO₂ emission performance assessment of steel production facilities, whilst taking into account and properly addressing potential distortions due to differing production facility layouts. To this end, this standard goes beyond the 'birds eye' CO₂ intensity approach (aggregated CO₂ inventory) by determining the performance of each process unit as part of a defined production value chain. This helps to identify the strengths and weaknesses along the value chain (performance assessment) in comparing CO₂ emissions or energy use with a reference.

Furthermore, within that mandate of the Commission, the generic standard (and its sector specific parts) **was successfully verified through field tests conducted by well-known institutions such as TÜV in Germany (for the field tests of EN 19694-2 for steel).**

We welcome that the Final TEG report⁷ proposes that technical screening criteria for "Manufacture of iron and steel" should be based on **standard EN 19694-2**, which would **allow the consideration of the steel value chain as a whole.**

However, even if the report proposes to base the screening criteria on the standard EN 19694-2 for the manufacture of iron and steel, it still recommends to use the ETS benchmarks because the report deems those benchmarks reliable and considers them as "the only consistent data today". It should be noted that the reference values included in the standard EN 19694-2 are based on the analysis of a set of reliable technical data of 60 steel facilities (with detailed information at single process levels) over a period of six years, are consistent as well.

The standard EN 19694-2 gives visibility not only for CO₂ emissions but also for energy consumption and efficiency at a much higher level of granularity. This is an important added value because it ensures that those two related elements (energy efficiency and CO₂) are consistently addressed. This will positively contribute to well-informed discussions with different stakeholders, since this level of transparency is not always forthcoming (some non-EU regions do not give visibility to both energy and CO₂ emission performances, because they focus more on energy efficiency while being less efficient in CO₂ emissions performance).

The reference values (for CO₂ emissions and energy) for each process have been set by the best 25% of the distribution curves of CO₂ or energy intensities. This means that 87.5% of each single

(<https://ec.europa.eu/growth/tools-databases/mandates/index.cfm?fuseaction=search.detail&id=463#>)

⁷ The final report on EU taxonomy, developed by the Technical Expert Group (TEG) on Sustainable Finance and its technical annex, published in March 2020 (https://ec.europa.eu/knowledge4policy/publication/sustainable-finance-teg-final-report-eu-taxonomy_en)

process must improve its operation to reach the reference⁸. The standard foresees a regular update of the reference values. The reference values are not per se higher than the ETS benchmarks, which target direct emissions. It should be noted that the reference values include indirect emissions (from electricity and utilities) - leading to “processing performance indicators”; or indirect emissions and utilities as well as upstream emissions – leading to the “total performance indicators”. This gives a more comprehensive assessment of CO₂ emission and energy performance, and can at the same time, be put in relation with ETS benchmarks.

Practical implementation of EN 19694-2

The standard is also already formulated as an Excel tool ready for use and publicly available on the EUROFER website⁹. It delivers not only quantitative results (per steel product, process, and site), but it also provides a report in the form of graphs, which allows a deep analysis of the impact of various measures applied at the different single process levels. This helps to identify the existing improvement potential for reduction of CO₂ emissions and energy consumption – which contributes to development of effective decarbonisation strategies, as weaknesses and strengths at each stage along the value chain can be analysed.

Using the standard increases transparency and ensures equal treatment of the operators/companies because the standard has high granularity, clear definitions and a clear set of calculation rules. The excel tool helps ensure that reliable data are being used because it performs the data quality checks and reports on carbon and energy balances along different stages of the value chain.

Operators will only have to fill in the template (excel tool) with their data. The excel tool will calculate the intensities and performances against the references and the results will be reported at different stages of value chain depending on the configuration of the site/facility chosen by the operator to reflect the value chain relevant to his operations. Results are being also provided for the entire site as a summary of the impact of different process stages. In particular, the report helps to see the impact of a given measure on the overall performance of the site regarding CO₂ emissions and energy efficiency. This provides information about the effectiveness of the intended action or requested investment – which is an added value for decision taking.

The burden of the work falls to the operator, who has to deliver the necessary information.

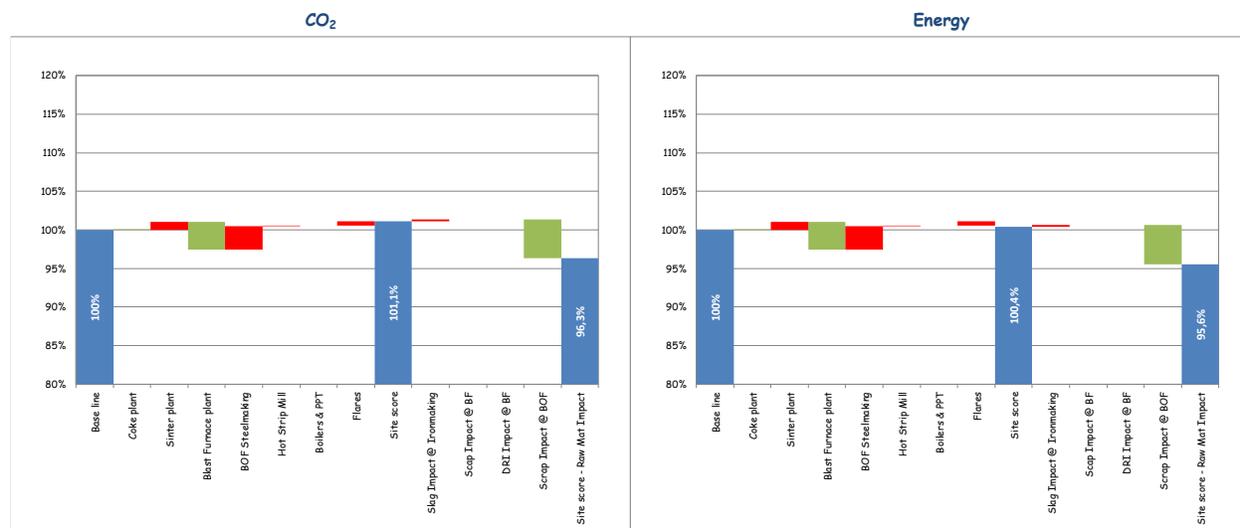
Financial institutions can use the results from the excel tool to assess the effectiveness of the investment on the individual process performance as well as on the performance of the overall value chain (emissions per tonne of steel product). Eligibility will be achieved if the investment leads to the installation being at/or below the reference (Reference Value).

⁸ An average set by 25% lowest CO₂ emitting installations means that only 12.5% of the installations may be below or at that average while 87.5 % will be above the average

⁹ Excel tool for European Standard EN 19694-2 (<https://www.eurofer.eu/publications/reference-documents/excel-tool-for-european-standard-en-19694-2>)

In summary the EN 16964-2 offers the following advantages over using the ETS benchmarks:

- A more comprehensive assessment of both the CO₂ emissions and energy efficiency taking into account interconnected processes and upstream impacts.
- An inclusive and transparent assessment of the reduction potentials within the whole steel value chain.
- Challenging, realistic and achievable eligibility criteria which incentivises the most effective investments for CO₂ emission reduction.



Example of results from the excel tool in waterfall form (the results are also delivered for the intensities in tCO₂/t or GJ/t, also for the different production steps)

Threshold for scrap usage

We welcome that the technical screening criteria for sustainable contribution to climate change mitigation as proposed in TEG report provides the principle that “secondary production of steel (i.e. using scrap steel) is considered eligible due to significantly lower emissions than primary steel production”.

Furthermore, the report suggests that “all production of steel in EAF where at least 90% of the iron content in the final products is sourced from scrap steel is considered eligible. In this case, no other thresholds are applicable”. We welcome this provision of the report, which acknowledges the principle that the secondary steel production route should be considered sustainable because it enables the recycling of steel, contributing this way to a significant reduction of CO₂ emissions, but at the same time we remark that the proposed threshold does not consider all the EAF produced steel qualities, in particular high alloy or stainless steels, nor all low carbon input material, eg. HBI/DRI, and would not correspond to a series of efficient practices in this production route. Thresholds for the use of steel scrap need to reflect technical feasibility, sufficient availability of needed scrap quality and the range of products being produced. In addition, expressing the threshold for the use of steel scrap in terms of iron content in the final product will be challenging and sometimes impossible to monitor.

Therefore, we suggest using the share of scrap input as the indicator (as done in the June 2019 TEG report) and using the following thresholds for EAF produced steel qualities:

- ***Steel scrap input relative to product output for EAF carbon steel: $\geq 90\%$***
- ***Steel scrap input relative to product output for EAF stainless and high alloy steel (speciality steels): $\geq 70\%$***

Steel scrap is being recycled both in the primary and in the secondary production routes, contributing to circular economy, and reducing CO₂ emissions and energy use in all cases. Hence, best practice as regards steel scrap recycling should be supported in all instances for both production routes, whilst considering the share of alloys needed. It should be noted that, whilst stainless and other alloy steel (speciality steel) account for 21% of the steel produced in Europe by tonnage¹⁰, their relative share in terms of economic value is more significant.

¹⁰ European Steel in Figures 2020, page 17 (<https://www.eurofer.eu/assets/Uploads/European-Steel-in-Figures-2020.pdf>)