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2 February 2024

Position paper on CBAM implications to the stainless steel industry

Summary

- The EU's Carbon Border Adjustment Mechanism (CBAM) was approved in April 2023 to reduce carbon leakage, encourage manufacturers to make their production processes greener, and to create a level playing field for goods produced both inside and outside the EU.
- The CBAM targets goods with high carbon leakage risk and emission intensity including, amongst others, iron and steel. However, CBAM does not apply to production activities of certain industries as such but applies to imports of certain types of goods originating from outside the EU.
- CBAM is effectively mainly a reporting obligation and financial liability on embedded emissions of covered imports. Transitional period with reporting liabilities have entered into force in October 2023, and the operational period with actual CBAM cost impacts will begin in 2026.
- The price of CBAM certificates will be linked to average price of EU ETS allowances and the gradual phase-out of free allowances will also gradually increase the CBAM cost impact.
- Iron and steel sector, including stainless steel industry, is one of the main sectors to be impacted by CBAM, including for example importers of semifinished goods. Also, EU producers can be impacted by CBAM, e.g., by importing certain raw materials in the EU, but could typically have lower CBAM coverage and CBAM cost impact than imports of stainless steel produced outside the EU. Many end-products of stainless steel are at least still at this point outside the scope of CBAM (the list of CBAM covered products is, however, likely to be extended in the future). On the other hand, many end-products of stainless steel are currently not covered by CBAM, and the current scope also does not cover for example all raw materials which are substitutive alternatives. In summary, CBAM implications even within stainless steel sector can be very different between operators.
- Although CBAM will most likely impact also EU producers of stainless steel, for example, due to ferrochrome being subject to CBAM, Outokumpu is in good position considering its own ferrochrome production in the EU and with high content of recycled materials used in stainless steel production that are currently outside the scope of CBAM and/or have low emissions.
- While CBAM encourages to make more sustainable choices in the supply chain and increases the transparency and traceability of supply chains across the industry, it could also lead to price increases, additional administrative tasks, supply chain changes and/or even adverse market position implications in certain cases.
- Current CBAM legislation still includes certain potential issues with regards to providing level playing field between operators in stainless steel industry and meeting the objectives of the CBAM. Such issues include, for example, the scope of emissions to be considered, limited scope of CBAM covered goods, risk of circumvention actions to mitigate CBAM impact, and combined impact of CBAM and the reform of EU ETS for EU operators.

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Background, scope of work and limitations

Outokumpu Oyj ("Outokumpu" has requested us (EY Advisory Oy, "EY") to prepare a position paper on EU Carbon Adjustment Mechanism's (CBAM) implications for the stainless steel industry. The main purpose of the paper is to provide stakeholders with more detailed information on CBAM and its impacts.

This position paper provides a description of EU CBAM, discussing in some detail its functionalities, legal framework, scope, liabilities, and other frequently asked questions on CBAM. Further, this paper also includes descriptions and insights on the potential impacts of EU CBAM for stainless steel industry in specific.

The Introduction to CBAM in Section 1, as well as Section 2 and 3 below are based on legislation currently in force as well as on further guidance and other official material provided by the EU Commission, supported by our experience on relevant issues and frequently asked questions on CBAM in general. Please note that the legislation is subject to updates and changes and that the validity of the information presented should be confirmed separately based on CBAM legislation in force.

Descriptions and our comments presented in Section 4 below are based on valid CBAM legislation, Commission's other official material on CBAM and sector-specific information and comments provided by Outokumpu to EY and/or information confirmed by Outokumpu. Please note that EY has not verified the correctness of information provided by Outokumpu, we have not performed any in-depth analysis of stainless steel industry or on CBAM's financial and/or other implications for stainless steel industry.

Information and commentary provided in this memo are intended as general level information only and are not intended to be relied upon as accounting, tax, legal or other professional advice.

1. Introduction to CBAM

1.1. Overview

In April 2023, the European Union approved the EU Carbon Border Adjustment Mechanism (CBAM) and reform of the European Union Emission Trading System (EU ETS), which are key components of EU's "Fit for 55" legislative framework. With CBAM, the EU aims to reduce the risk of carbon leakage, encourage producers in non-EU countries to green their production processes as well as advocate for the introduction of carbon pricing measures in non-EU countries as well.

CBAM is an instrument that most importantly sets reporting requirements but also liabilities to buy CBAM certificates, based on certain emissions embedded to certain goods imported into the EU. The mechanism is partly connected with customs legislation and EU ETS. In practice, CBAM will set a carbon cost for imported products in the scope of CBAM, with the intention of levelling the playing field between EU and non-EU producers. The introduction of CBAM and its financial implications are aligned with the phase-out of the allocation of free allowances under the EU ETS and hence, aims to support the decarbonization of the EU industry.

Implementation of CBAM has been divided into a "transitional period" and an "operational period". The transitional period has started on 1 October 2023 with the first quarterly CBAM report due on 31 January 2024. During the transitional period, EU importers (*CBAM declarants*) are required to report imports of CBAM covered goods, including information related to greenhouse gas emissions embedded in the production of the goods. Non-compliance with CBAM liabilities can result in penalties. Actual financial implications of CBAM will enter into force in 2026.

Current CBAM rules target goods of non-EU origin that have a particularly high risk of carbon leakage and have high emission intensity production. Scope of goods covered by the mechanism include cement,

electricity, fertilizers, aluminium, iron, steel, and hydrogen as well as certain upstream and downstream products.

1.2. Legislative framework

The mechanism is based on EU Regulation on Carbon Border Adjustment Mechanism (2023/956) that was adopted in May 2023 and is directly applicable legislation in EU Member States. The CBAM regulation lays down the key principles and liabilities of the mechanism, such as scope of products and transactions, application of the mechanism, requirements to submit CBAM declarations and the use of CBAM certificates. The regulation also introduced and defined the phasing of CBAM implementation into a transitional period and an operational period.

In August 2023, the EU Commission also adopted the CBAM Implementing Regulation (2023/956) governing the implementation of the CBAM during the transitional period. The CBAM Implementing Regulation provides more detailed rules and clarifications for example on the CBAM reporting obligations, penalties for non-compliance, determination and calculation of reportable embedded emissions and short-term temporary simplifications to be used for the reporting of embedded emissions. The Commission has also published other supportive material such as guidance letters and Q&A documents.

It should be noted that the rules and guidelines set out in the CBAM Implementing Regulation are only applicable for the transitional period. While similar type of more detailed rules and guidelines for the operational period of CBAM are not yet available, the Commission is expected to prepare separate implementing regulation for the operational period as well.

The competent authority for CBAM is the European Commission and its Directorate-General for Taxation and Customs Union. The Commission is responsible for preparation of CBAM legislation and changes thereof, but also the main competent authority to monitor the implementation and progress of CBAM, to review CBAM reports and risks of circumvention, to manage CBAM Registry used for reporting and to set up central platform for CBAM certificates. This means for example that CBAM reports are submitted at the EU level in the centralized CBAM Registry. However, each EU Member State has either already appointed or is going to also appoint a national competent CBAM authority (“NCA”) to support the Commission and the CBAM declarants for example by helping companies on local level. The NCA can be for example customs authorities, national emissions trading agency or environmental agency, depending on Member State.

1.3. Scope of goods

Products in the scope of CBAM are defined in detail in the CBAM Regulation. Although CBAM today has been described to target cement, fertilizers, aluminium, iron and steel, electricity, and hydrogen, CBAM legislation does not require the goods to be, for example, used by person having business in above-referred sectors. Instead, CBAM is generally applicable to all imports of goods with certain classification and country of origin.

Exact product types covered by CBAM are defined by the goods’ tariff classification in accordance with the EU‘s combined nomenclature, CN codes, which are also used for the EU’s common customs tariff in importation. CBAM Regulation includes a detailed list of CBAM covered goods (and exceptions to CBAM coverage) by CN codes.

At least currently CBAM does not cover all products used in the above-referred sectors (such as iron and steel). On the other hand, the current scope of CBAM products does not include only carbon-intensive raw materials used in industrial manufacturing of “production materials” (such as for example kaolinic clay, pig iron, steel slabs or unwrought aluminium) but also certain semifinished products and even finished end-

products, without derogating the intended use of products (e.g., consumption as energy, utilization as raw material, use as spare parts).

The Commission has announced its plans to review the need and feasibility of expanding the scope of covered goods by the end of transitional period. This could include, for example, extending CBAM to cover also other products and sectors covered by EU ETS and/or to cover also wider range of semifinished products and end-products.

The CBAM Regulation includes specific provisions regarding "circumvention". This provision confirms Commission's intention to monitor and review the application of CBAM rules, identify potential circumvention practices to avoid CBAM and, if needed, to amend the CBAM rules, for example, by extending the list of covered products. These circumvention provisions mention the following of examples of practices that could be considered as potential ways to avoid or mitigate CBAM implications and thus, as circumvention of CBAM:

- slight modification of goods to make those goods fall under CN codes not subject to CBAM, except where the modification alters their essential characteristics, and
- artificial splitting of shipments into consignments for which the intrinsic value does not exceed the threshold of low-value consignments (EUR 150).

In addition to CN code classification, scope of CBAM covered goods is also defined by goods' country of origin. CBAM only applies to goods having *non-preferential country of origin* (concept defined in the EU customs legislation) outside the EU, except for goods originating in Iceland, Liechtenstein, Norway, Switzerland, and certain territories of EU Member States that are outside the customs territory of the EU. List of countries and territories outside the scope of CBAM is defined in CBAM legislation and can be updated based on certain criteria.

Goods covered by CBAM are either *simple goods* or *complex goods*. These definitions are important for determining the reportable information required for imported goods, especially to determine the amount of embedded emissions subject to CBAM liabilities. Simple goods are goods produced from such input materials (*precursors*) that are, in the meaning of the CBAM reporting obligations, considered to have zero embedded emissions. Complex goods, on the other hand, are goods that require input of simple goods (i.e., CBAM covered goods as precursors) in production process. When reporting the embedded emissions for complex goods, the embedded emissions of relevant CBAM covered precursors used also must be declared.

1.4. Scope of transactions

Actual CBAM liabilities are triggered by importing CBAM covered goods into the EU customs area by *releasing goods into free circulation.* Release for free circulation is a term defined in the Union Customs Code (952/2013), most typically referring to "traditional importation" of non-Union goods from outside the EU, but release for free circulation also covers, for example, ending an inward processing procedure by releasing goods for free circulation in the EU customs territory.

As described above, only certain goods having country of origin outside the EU and other above-listed countries and territories can be subject to CBAM. This means that CBAM is not applicable for imports of goods with non-preferential origin in the EU or "imports" of products with the *status of Union goods* in the meaning of customs legislation (under special customs procedures). However, it should be noted that if goods of EU origin have been exported outside the EU for example for further processing which results in changes to applicable CN code classification of the product, also the non-preferential country of origin

would generally be changed. Consequently, re-import of goods that have been previously exported from the EU as having EU origin can in certain cases result in CBAM liabilities.

Further, it is possible that for example goods classified under CN codes listed in the CBAM legislation are shipped from the UK to the EU and are released for free circulation in the EU, but the import is not subject to CBAM due to having non-preferential country of origin in Switzerland. On the other hand, it is also possible that imported goods have been shipped to the EU for example from Switzerland but have the UK as non-preferential country of origin, meaning that the import would be subject to CBAM by its origin.

For example, purchases outside the EU do not trigger CBAM liabilities when goods are not imported to the EU. CBAM liabilities are also not triggered for example when goods enter the EU customs territory by being placed under certain customs procedures (for example inward processing) or there are certain reliefs applied (for example imports of "returned goods", as defined in customs legislation, are not subject to reporting obligations during transitional period and, during the definitive period, returned goods shall be reported with “zero” embedded emissions). It is, however, possible that the CBAM liabilities are triggered if such customs procedures are ended by releasing the goods for free circulation.

The Carbon Border Adjustment Mechanism does not have any special rules or liabilities for exporting or re-exporting goods to outside EU. However, for goods to be either finally or temporarily exported from the EU and to be later re-imported in the EU, there are numerous potential scenarios and customs procedures available which have different CBAM implications. The application of customs legislation should be carefully considered also when evaluating CBAM implications. For example, re-imports from temporary exportation procedure or imports of returned goods in accordance with certain preconditions stipulated in the customs legislation are outside the scope of CBAM.

1.5. Exemptions

In addition to certain non-EU countries and territories as well as certain types of imports being exempted from the scope of CBAM legislation, there are also four additional general exemptions for the application of CBAM.

The first exemption is the so-called *de minimis* exemption, which provides that CBAM is not applicable on *low value consignments* (defined in the Union Customs Code) of CBAM goods. i.e., when the value of imported goods does not exceed EUR 150 per consignment.

The second exemption is for goods contained in the personal luggage of travellers travelling from non-EU countries, provided that the intrinsic value of such goods does not exceed the value specified for goods of negligible value, as referred above for the first exemption.

In addition to above referred de minimis exemptions, goods imported for military activities are also exempted from CBAM, when the goods are imported in accordance with Article 1, point 49 of Commission’s Delegated Regulation (2015/2446).

Further, imports of electricity from non-EU countries that are integrated with EU’s internal electricity market though market coupling in such a way that a technical solution to apply CBAM to these imports is not available, are also exempted from CBAM provided that certain conditions, such as requirement to apply EU electricity and energy legislation, are met.

1.6. Covered emissions

The CBAM legislation requires CBAM declarants to report information on the total *embedded emissions* in the imported goods and, during the operational period, also to purchase and surrender CBAM certificates covering these embedded emissions.

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Based on current CBAM legislation, “embedded emissions” are defined as direct emissions (release of greenhouse gases into the atmosphere) released during the production of goods and, where applicable, indirect emissions from the production of electricity that is consumed during the production processes. These direct and indirect emissions are calculated in accordance with the methods set out in Annex IV of the CBAM Regulation and further specified in the Implementing Regulation adopted.

A comprehensive list of greenhouse gases to be reported for each CBAM goods can be found in the Annex I of the CBAM regulation. There is variation in the reportable emissions between the different categories of CBAM goods: while the embedded carbon dioxide emissions (CO_2) should be reported for all categories, there are also additional greenhouse gases that should be considered for certain goods categories (perfluorocarbons for aluminium and nitrous oxide for fertilizers).

It should be noted that the scope of emissions to be reported for CBAM and methodology to be applied for calculating embedded emissions is not identical to other emission reporting requirements and/or emission calculation protocols. If businesses or other persons required to calculate CBAM embedded emissions are already metering and/or calculating emissions for other purposes, these methodologies likely cannot be at least directly and fully utilized to meet CBAM requirements, but CBAM will require additional efforts.

Emissions embedded to the imported CBAM goods are reported per *tonne of CO_2e* (one metric tonne of CO_2 , or an amount of other greenhouse gas reported, i.e., N_2O and PFC emissions to converted to tCO_2e values with an equivalent *e* global warming potential).

For the purposes of the CBAM regulation, direct emissions (often referred to as scope 1 emissions from producers’ point of view) include emissions from the production processes of CBAM covered goods including, for example, emissions from the material flows, possible waste gases and production of heating and cooling consumed during the production processes of the goods, irrespective of the location of the production of the heating or cooling. Indirect emissions (often referred as scope 2 emissions) refer to the emissions from the production of electricity that is consumed during the production process of the goods, irrespective of the location of the production of the electricity consumed.

For complex goods described in Section 1.3. above, also embedded emissions of the precursors should be taken into account. These emissions may for other emission calculation purposes be considered as part of so-called scope 3 upstream emissions.

Based on current CBAM legislation, during the operational period with cost impact taking effect as of 2026, for most of the CBAM covered goods (as specified in Annex II of the CBAM Regulation) only direct emissions are to be reported and considered in calculating the amount of CBAM certificates required. Consequently, indirect emissions such as emissions for the production of electricity consumed in the production of CBAM covered goods is not to be taken into account in total embedded emissions. When considering for example the variance in the type and level of emissions in the production of electricity – and country-specific or area-specific differences – one could argue that the exemption for such scope 2 emissions from being included in the basis for CBAM costs may not result in CBAM costs incurred for each imported good sufficiently and equally reflecting the carbon footprint. Based on Annex II of the CBAM Regulation, indirect embedded emissions are not to be considered, for example, for imports of iron and steel products, although for example stainless steel production can be considered to be electricity intensive.

It should also be noted that, unlike emissions from the production of electricity consumed in the production of CBAM goods, emissions from the production of heating and cooling consumed during the production processes of CBAM goods are covered by the definition of direct emissions (regardless of the location of

the production of the heating and cooling) and should always be taken into account in reportable embedded emissions.

1.7. Persons subject to CBAM liabilities

Generally, importer of record (in the meaning of Union Customs Code) for CBAM covered goods is subject to CBAM liabilities and is required to act as CBAM declarant. There are no specific threshold or preconditions for persons to be considered as liable for CBAM, except for the requirement to be established in EU Member State. This means that even occasional imports by any person (natural or legal person) can trigger CBAM liabilities.

In case of an indirect customs representative being used to declare imported goods on behalf of person not established in the EU, the indirect representative shall be considered as the person liable for CBAM obligations.

Also, persons established in the EU can appoint an indirect representative to act as (authorized) CBAM declarant on its behalf. However, in case the importer is established in the EU, the use of indirect representation for CBAM must be explicitly agreed between the parties.

Persons liable for CBAM are identified at EORI (Economic Operators Registration and Identification) number level, meaning that all CBAM covered imports by the same EORI number, for example, a company established in one Member State but having warehouses in multiple EU countries, shall be reported collectively. However, this also means that for example CBAM reporting of group companies must be carried out separately, on a company-by-company basis (assuming that no indirect representative is used).

CBAM declarants are required to apply for and hold an authorized CBAM declarant's licence by the end of 2025, authorized by national competent authorities. During the CBAM operational period, authorized CBAM declarant's licence will be a prerequisite to import CBAM covered goods into the EU. To be granted a status of the authorized CBAM declarant, the applicant must meet the criteria set out in the CBAM Regulation.

Non-compliance with CBAM obligations may result in penalties imposed on the CBAM declarant. Pursuant to the CBAM Regulation, national competent authorities shall impose penalties where the CBAM declarant has either not taken the necessary steps to comply with the reporting obligations or where the CBAM report is incorrect or incomplete, and the reporting declarant has not taken necessary steps to correct the report after the competent authority initiated the correction procedure. When determining the level of penalties, Member States should consider for example the extent of the unreported information, quantities of unreported imports, the amount of unreported emissions as well as whether the declarant has voluntarily taken measures to try to comply with CBAM liabilities and ensure that similar infringements are not committed in the future (more detailed list of the factors considered can be found from the CBAM legislation). At least for the transitional period, the amount of penalties imposed will be based on the amount of embedded emissions (EUR 10-50 per each tonne of unreported embedded emissions).

The EU CBAM legislation does not set any CBAM liabilities for non-EU suppliers or manufacturers operating outside the EU but reporting, authorization and CBAM certificate requirements only consider importers and/or their indirect representatives. However, as CBAM declarants are required to report detailed information on CBAM covered goods – such as embedded emissions – on which they often do not have information available internally, co-operation between EU importers and non-EU suppliers and producers is in practice required. Consequently, non-EU suppliers and manufacturers can be indirectly affected by the CBAM for example by new contractual obligations to be required to provide customers with certain information that is required for CBAM reporting purposes.

1.8. Transitional period and operational period

Transitional period

The transitional period of the CBAM commenced on 1 October 2023 and runs until 31 December 2025. Throughout the transitional period the importers of CBAM goods have only a reporting obligation: the CBAM reports shall be submitted on a quarterly basis and should contain details on the CBAM goods imported, the total emissions embedded into those goods as well as certain other information, such as on the production location and manufacturing of the goods.

One of the main elements of information to be provided in CBAM reports is the weight of CBAM covered products and the amount of emissions embedded in the imported goods. While the reported amounts of embedded emissions have to, as a general rule, be based on actual emissions, there are some temporary simplifications in the form of alternative calculation methods available for the first reporting periods, in case not all information required to determine the actual amount is available.

For the first three quarterly reports of the transitional phase, the default values published by the Commission can be utilized when reporting the embedded emissions of the CBAM covered goods. Whereas during the first three quarters, (Q4 of 2023, Q1 and Q2 of 2024) the default values can be used without any conditions or quantitative limitations, from Q3 of 2024 declarants can only utilize the default values for determining up to 20 % of the embedded emissions of complex goods. It should, however, be noted that while the default values can be used to determine the emissions embedded into the CBAM goods imported, there are also other information on the CBAM covered goods and their production required to be reported by CBAM declarants.

Until the end of the 2024, CBAM declarants are also allowed to utilize other alternative methods in calculating the emissions embedded for the CBAM goods imported (instead of methodology specifically provided for EU CBAM). These alternative methods include (a) carbon pricing schemes of the production countries, (b) potential compulsory emission monitoring schemes of the production countries and (c) other emission monitoring schemes of the production countries, as described in more detail in the Implementing Regulation.

While there is no requirement for external and accredited verification of embedded emissions during the transitional period, CBAM declarants are still responsible for the correctness of reported information, and pursuant to the CBAM Implementing Regulation the Member States shall impose penalties in case of non-compliance with the CBAM obligations. The amount of penalties imposed range between EUR 10 and EUR 50 per tonne of unreported emission and higher penalties may be imposed in case more than two incomplete or incorrect reports have been submitted in a row or the duration of the failure to report exceeds six months.

During the transitional period, the Commission will undertake reviews on CBAM and its implementation. During this review, it is possible/likely that there will also be extensions proposed to the scope of CBAM covered products and/or other changes to CBAM rules.

Operational period

The operational period will begin on 1 January 2026, meaning that importers of CBAM covered goods will be required to hold an authorized CBAM declarant's status and the authorized CBAM declarants will be subject to financial CBAM implications in addition to reporting liabilities.

CBAM declarants that have imports subject to CBAM will be required to *purchase CBAM certificates* during the year and must *surrender CBAM certificates* by annual CBAM report deadline. Number of CBAM certificates required will be based on the embedded emissions of imported CBAM goods. As CBAM

certificates will have to be purchased subject to charge, they will, in practice, result as “CBAM cost” on the embedded emissions of imported goods.

CBAM certificates are to be sold by the Member States through EU’s central platform. Price of CBAM certificates will be determined based on the weekly average auction price of EU ETS allowances. The certificates surrendered by each CBAM declarant shall correspond to the amount of the embedded emissions of the imported CBAM goods expressed in CO_2 tonnes.

In the operational period, CBAM reporting period will be calendar year, reporting due date being 31 May of the following year. During the operational period, the reported embedded *emissions shall be verified by an accredited verifier*.

To purchase the adequate number of CBAM certificates, the CBAM declarants shall ensure the availability and the correctness of the information on the embedded emissions. However, in case there is no such information available during the time of imports, the CBAM declarants can use default values to determine the number of CBAM certificates required (and for CBAM reporting, if required). It is worth noting that these default values available during the operational period of the CBAM are different than the default values used during the transitional period. The default values to be used in the operational period will be published later (probably during the transitional period) and it is likely that there will be differences to the default values published for the transitional period, for example by including country-specific default values increased by mark-ups. Based on communications of the Commission, it is likely that the default values set will be higher than the actual embedded emissions, meaning that it would be more beneficial to the importers to use the actual values where available. Annex IV of the CBAM Regulation states that the default values to be used in post-transitional period would as a main rule be set at the average emission intensity of each exporting country increased by a proportionately designed mark-up.

In case a carbon price or similar fees have already been effectively paid on the embedded emissions of the goods in the country of origin, these costs or fees can within certain conditions be used to reduce the number of CBAM certificates required to be surrendered by authorized CBAM declarant.

2. Interconnections and interplay between CBAM and EU ETS

The EU Emissions Trading System (“EU ETS”), is a cap-and-trade initiative that aims to reduce greenhouse gas emissions across the EU by placing a cap on the total emissions allowed from the certain, power and carbon intense industries (for example, steel and iron, electricity and heat generation, aviation and maritime) and by facilitating a trading system of the emission allowances. To mitigate the risk of the carbon leakage (i.e., the business transferring their production to non-EU countries to benefit from lower environmental standards), there has been also allocation of free allowances to industrial and aviation sectors.

The EU has introduced CBAM to further minimize the risk of carbon leakage by setting a cost on embedded emissions of goods imported in the EU. There are similarities between the two systems: The scope of CBAM was originally designed based on the scope of EU ETS. Number of CBAM certificates surrendered will have to be matched with the amount of embedded emission of imported goods similarly as in EU ETS the emissions are required to be offset by ETS allowances. CBAM certificate prices will be determined based on average EU ETS allowances pricing. Additionally, the geographical scope of CBAM is linked to countries and territories subject to EU ETS (or equivalent carbon pricing systems). Further, like the CBAM, there is also an intent to extend the scope of the ETS in upcoming years to further support the achievement of the EU’s climate goals.

While there are similarities between CBAM and EU ETS, there are also substantial differences between the two systems. For example, while EU ETS covers only certain sectors, such as electricity and heat

generation, steel and iron production, aviation and maritime, CBAM is generally applicable to all imports of goods with certain classification and country of origin, without any special requirements for the purpose of use or on the importer's status.

EU ETS sets a cap on the total amount of greenhouse gases that can be emitted by the operators within the scope of the system. However, operators can trade, purchase, or receive emission allowances to match the number of allowances with the amount of operator's emissions. Even though in EU ETS there is a limited set of the allowances available for purchase / allocated for free, the operators can trade allowances with each other or spare the allowances for future.

Contrary to the EU ETS, there is no similar cap and trade system in use regarding CBAM certificates. Instead, the amount of CBAM products available for purchase is not limited and the certificates can be purchased during the reporting period based on embedded emissions accumulated. However, CBAM certificates can be purchased from Member States only.

As already referred to, pricing of CBAM certificates will consider the free allowances of EU ETS by priced being based on average ETS allowance prices. Thus, the financial impacts of CBAM will be gradually increased hand in hand with the gradual phase-out of EU ETS free allowances during 2026-2034.

3. Potential legislative changes for countries outside the EU

According to EU lawmakers, one of the incentives of CBAM is to encourage also non-EU countries to introduce local emission trading schemes, carbon taxes, or other similar types of measures to drive the transition to more sustainable production and reduction of greenhouse gas emissions. Current EU CBAM legislation can be seen to include even sort of incentives for non-EU countries, as the framework of EU CBAM includes a possibility to have carbon price paid in the country of origin deducted from the EU CBAM costs (provided that the carbon pricing measures in the country of origin fulfil certain requirements) and non-EU countries with satisfactory carbon pricing measures could potentially be awarded exemptions from EU CBAM.

The UK Government, for example, has already announced its plans to introduce the UK CBAM by 2027. Whilst the details are yet to be published on the UK CBAM, the UK mechanism is likely to have some similarities but also differences to the EU CBAM. In addition to the UK CBAM, for example Australia and Japan have indicated that they may introduce local CBAMs in the near future.

4. Implications of CBAM to stainless steel industry

4.1. General overview on stainless steel industry

Production of iron and steel products, including materials used in production (such as raw materials, energy sources, ancillary substances, and other consumables) is at least historically known to generate considerable greenhouse gas emissions. Recognizing the significant environmental impact of the iron and steel industry, the EU has deemed it as one of the primary sectors within the scope of the CBAM and, thus, CBAM covers a notable amount of different products produced and/or consumed in the industry. Outokumpu operates in the iron and steel sector, and its primary operations include production of stainless steel and ferrochrome to produce stainless steel.

Stainless steel is an alloy of iron and carbon and includes at least 10.5% chromium to avoid corrosion and it is widely used for example in automotive, construction, heavy industries, and consumer goods, as well as also increasingly in the green industries such as hydrogen and clean energy. Most stainless steel products are manufactured outside of the EU, with China being the largest producer. For instance, in 2023, China produced 26 606 000 metric tonnes of stainless and heat-resisting steel, compared to Europe's

production of 4 407 000 metric tonnes. Apart from Europe and China, stainless steel is produced also in other regions such as in the United States, Brazil, Indonesia, Russia, South Africa, South Korea, and several other Asian countries on a smaller scale. (*Worldstainless 2023, Stainless and heat resisting steel melt shop production (ingot/slab equivalent) in 2023*).

Stainless steel can refer to numerous different types of goods, for example depending on the material contents, processing level, production routes, state, forming and intended use. When considering basic stainless steel production in steel production sites from tariff classification point of view, stainless steel can be classified for example to the following combined nomenclature (CN) codes (list is not exhaustive):

- 7218 Stainless steel in ingots or other primary forms; semi-finished products of stainless steel
- 7219 Flat-rolled products of stainless steel of a width of 600 mm or more
- 7220 Flat-rolled products of stainless steel, of a width of less than 600 mm
- 7221 Bars and rods, hot-rolled, in irregularly wound coils, of stainless steel
- 7223 Wire of stainless steel.

Majority of stainless steel products, especially intermediate products or semifinished goods that are used as production materials of other products, are based on their CN code classification covered by the list of CBAM goods. This also applies to the list of goods presented above.

Production of stainless steel is very energy-intensive process. While production of stainless steel utilizes raw materials including some carbon content themselves, also the production process requires lot of electricity, especially when stainless steel is produced in electric arc furnace. In the electric arc furnace process, electrodes of the furnace create and electric arc and contact with recycled stainless scrap (or other iron/steel) and various alloys such as chromium nickel, and molybdenum depending on the type of stainless steel produced. A current is passed through the electrode to increase the temperature high enough for the scrap and other materials in the furnace to melt. Thus, electronic arc furnace requires high volumes of electricity.

While production of stainless steel utilizes raw materials including some carbon content themselves, also the production process requires lot of electricity, especially when stainless steel is produced in electric arc furnace where carbon electrodes contact recycled stainless scrap (or other iron/steel) and various alloys such as chromium and nickel, molybdenum etc. depending on the type of stainless steel produced.

Ferrochrome is one of the crucial ingredients in the production of the stainless steel, due to its corrosion resistance improving qualities. South Africa has the largest chromium ore reserves but most of the world's ferrochrome is produced in China, South Africa, and Zimbabwe. There are some ferrochrome production plants also in the EU and one of these ferrochrome plants, Outokumpu's plant in Tornio, utilizes chromium ore mined locally at Outokumpu's mine in Kemi.

There are different ferrochrome products in the market and majority of them are by CN code classification subject to CBAM obligations. List of CBAM covered goods includes for example, ferrochrome products under CN code heading 7202. However, for example ferro-silico-chromium classified under 7202 50 which could potentially be used in the production of stainless steel in place of ferrochrome, is not covered by CBAM. Further, carbon emissions levels on ferrochrome production can vary considerably depending on production routes and processes, minerals used, production locations as well as on other factors.

Similar to stainless steel, the production of ferrochrome requires also a lot of electricity: the production process usually involves smelting of chromite ore with (bio)coke or anthracite in a high-temperature electric arc furnace. The reaction produces CO_2 during the reduction of chromite to ferrochrome. The ferrochrome is then further casted into moulds and cooled before being shaped (or crushed). Assuming that typical raw materials and other products typically used for ferrochrome production are for example chromium ore

under CN heading 2610, anthracite under CN code 2701 11 00 and coke under heading group 27, these products should to a large extent at least currently fall outside the scope of CBAM.

In addition to ferrochrome, also other ferroalloys are typically used in the production of stainless steel. Most of these of the ferroalloy product groups typically used for stainless steel are by CN code in the scope of CBAM, and these CBAM covered ferroalloys include, for example, ferromanganese and ferro-nickel classified under certain CM codes. However, there are also some ferroalloys currently outside the scope of CBAM, such as ferro-silicon, ferro-silico-manganese, ferro-silico-chromium and ferro-molybdenum when classified under certain CN codes.

Nickel and especially ferronickel, is also widely used in stainless steel production. Nickel and ferronickel are produced from laterite and saprolite ores by smelting in electric furnace, or blast furnace. Similarly, as the production of ferrochrome and stainless steel in electric arc furnace described above, also production of nickel and ferronickel in electric arc furnace requires a lot of electricity. As for production in blast furnace, this typically causes considerable CO_2 emissions mainly by energy products used in blast furnace (e.g., coke). There are numerous different nickel products by CN code, commercial product name and properties, even amongst those products which can be used for stainless steel production, of which only some are currently subject to CBAM. However, for example ferronickel (or nickel pig iron) typically used in stainless steel production is generally subject to CBAM. Nevertheless, there are also some other nickel products that could potentially be used in the production of stainless steel, though they might require more production steps and some of them might potentially incur even notably more embedded emissions than for example, ferronickel. These “alternative” nickels include for example utility nickel and nickel metals which, when classified under certain CN codes, would be currently outside the scope of CBAM.

In addition to ferroalloys described above, stainless steel scrap and alloyed scrap are also typically one of the main materials used for stainless steel production. While certain stainless steel scrap, for example those classified under CN code 7204 49, does not fall within the scope of CBAM, it should be noted that the amount of scrap (tonnes) used for producing (one tonne) of the stainless steel product should still be reported in CBAM declarations.

Stainless steel can be used for various purposes in almost all industry segments. In the automotive industry, for example, stainless steel is utilized in making structural components and exhaust systems. The chemical and energy sectors often use stainless steel for creating materials for power plants and machinery. In architecture, stainless steel finds use in construction materials and facades. Heavy industry utilizes stainless steel for example in aerospace, heavy transport, mining, oil & gas and mining (for example as structural components). When it comes to consumer goods, stainless steel features prominently across the industry in categories such as catering, food industry (including for example tanks used in food and drinks manufacturing), and in household and commercial appliances.

Despite the steel industry being one of the main targets of CBAM, from industry point of view the current CBAM legislation in practice primarily applies to raw materials and semi-finished products (not so extensively for finished end-products). For example, the majority of products used and produced by Outokumpu, such as flat-rolled products of stainless steel (e.g., classified under headings 7219 and 7220), fall within the scope of the CBAM legislation and thus, CBAM will have an impact not only to the competitive landscape of Outokumpu but also their customers.

There are also some end-products of the stainless steel industry, such as screws, bolts and nuts under the heading 7318 that are also subject to CBAM and thus, directly impacted similarly as the raw materials and semi-finished products referred above. Though the current CBAM legislation doesn't directly cover majority of the stainless steel end products, such as cutlery and sinks (under headings 8215 and 7324 10 respectively), these products can still be indirectly impacted by CBAM , for example by potential cost

increases and changes in the supply chain in case of raw materials being subject to CBAM. The impacts of CBAM for stainless steel end-products, and for businesses and consumers dealing with these types of products have, are very different and detailed CBAM implications should be analysed on case-by-case basis.

4.2. Potential CBAM implications on stainless steel production in general

Potential CBAM liabilities for EU producers

As discussed above, under the current legislation some of the raw materials used in the production of stainless steel such as ferrochrome and certain ferroalloys are in the scope of CBAM, while for example scrap metal, certain ferroalloys and certain nickel products are outside the scope of CBAM. However, still many relevant raw materials for the production stainless steel are subject to CBAM (when being of non-EU origin) and will likely cause at least some CBAM liabilities for EU importers. However, as CBAM is not applicable to purchases of goods originating in the EU, purchases of raw material sourced in EU, e.g., ferrochrome originating from Finland, does not trigger CBAM liabilities.

Further, also electricity, which is crucial part of stainless steel production process, is in the scope of CBAM. However, despite industry's high energy-intensity, EU operators will not necessarily face significant CBAM implications due to electricity consumption. This is primarily because in many locations in the EU where stainless steel is produced, it is possible to purchase either local electricity or to import electricity otherwise exempted from CBAM (such as electricity produced in Norway that is provided within Nordics). Moreover, it should also be noted that there can be significant differences in the emissions embedded in the production of electricity. Thus, it is possible that even imports of electricity subject to CBAM reporting liabilities will not trigger significant financial liabilities if the electricity has low embedded emissions.

In addition to the above, the stainless steel industry, similarly to other industries, requires a significant quantity of other goods to support its production processes. These goods can include, for example, auxiliary substances, machinery along with its spare parts, infrastructure such as buildings and constructions, as well as various other types of equipment. Depending on the origin and the CN classification of these goods, they could also become subject to CBAM obligations.

Taking the above presented into account, typical stainless steel production in the EU is likely to trigger at least some CBAM liabilities due to the imports of CBAM covered goods. On the other hand, the industry operators can also be impacted by CBAM implications indirectly, for example when sourcing raw materials or products within EU, even though purchases of products from EU should generally be outside the scope of CBAM due to the products' origin or because of goods already having status of union goods. Such indirect implication could be, for example, increases in prices due to suppliers facing CBAM liabilities.

From EU point of view, CBAM can be seen at least partly levelling the playing field for stainless steel industry. Whereas the stainless steel production in the EU has already been subject to EU legislation including, for example, developed EU level requirements for products and manufacturing processes and possibly also to EU ETS, CBAM establishes a similar (although, at least in this point, still quite limited) system to imported goods by setting a carbon price to the production outside the EU as well.

Even though CBAM mainly targets the goods and products imported from outside the EU, it will have some implications to the stainless steel production in the EU as well. This is, for example, due to the CBAM covered materials used in the stainless steel production in the EU. That said, it is likely that stainless steel produced outside the EU includes more embedded emissions than the materials imported to be used in intra-EU stainless steel production, and thus, the importation of the stainless steel does have greater CBAM implications compared to the sole importation of materials and other precursors.

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Further, CBAM can also have impact on the choice of raw materials used in the industry. For example, in intra-EU production it is also possible to control the CBAM implications by purchasing the precursors that would, based on their classification, be subject to CBAM from EU origin rather than outside the EU. For example, as Outokumpu has ferrochrome production in the EU, it can, at least, to a certain extent, utilize EU-produced ferrochrome in its stainless steel production. Whereas the ferrochrome originating from EU does not trigger any CBAM liabilities or costs to Outokumpu, the imported ferrochrome would, most likely, be subject to CBAM obligations.

Additionally, as all precursors required to manufacture stainless steel are not in scope of the CBAM, in some cases it can be possible for importers and other operators to purchase raw materials with similar or almost similar qualities that are not affected by CBAM obligations, instead of raw materials covered by CBAM. For instance, a stainless steel producer could potentially in certain cases choose to import and use nickel metal as raw material in production instead of ferro-nickel, with nickel metal potentially not falling under the scope of CBAM, unlike ferro-nickel. This would not, at least in all cases, align with the key objectives of CBAM because the alternative materials – while having been left outside the scope of CBAM - can sometimes have even higher or notably higher level of embedded emissions than substitutive products in the scope of CBAM. For example, in relation to nickel matte, nickel-metal and utility-nickel (products currently outside the scope of CBAM) the emission levels can vary a lot depending on for example materials/minerals used, production routes used, energy products used and location of the production.

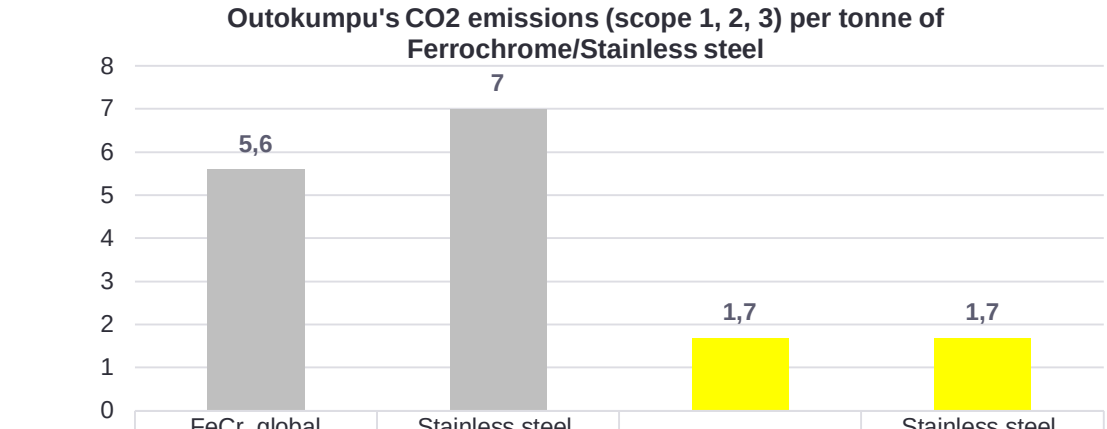
As long products and semifinished products of stainless steel are largely covered by CBAM whilst further processed products and end products of stainless steel are currently still largely outside the scope of CBAM, one potential impact of CBAM for the stainless steel industry is a shift of manufacturing and/or processing stages of stainless steel products outside the EU. This provides that, instead of acquiring for example semi-finished goods from non-EU suppliers and processing them within the EU, the EU operators could choose to purchase goods at higher degree of processing from outside the EU or execute their own further processing of stainless steel products outside the EU. This is further supported by considering that production or processing of stainless steel in the EU can be subject to EU ETS, for which costs of EU production are also expected to be increased by the phasing-out of free allowances.

However, it should be noted that also, for example, customs duties, potential anti-dumping duties and transportation costs should also be taken into account when considering production costs between alternative options available.

Impact of embedded emissions in the CBAM covered imports

As described above, embedded emissions will determine the number of CBAM certificates required and, thus, level of CBAM costs incurred, which can be even substantial in iron and steel industry. The amount of total embedded emissions is impacted by, amongst others, the methodology applied to determine and calculate emissions. For example, the current status for indirect emissions (”scope 2 emissions”) being scoped outside the CBAM covered emissions for the operational period can significantly decrease the amount of reportable embedded emissions, considering that there are globally notable differences in the emissions for electricity production. However, there are also other factors directly or indirectly affecting the amount of embedded emissions, such as raw materials used for production (especially if there are various options available), greenhouse gas emissions released from these materials in production, potential precursors covered by CBAM to be used in production (of which emissions embedded in the production should also be included in emissions calculation), production routes, energy products used and potential carbon capturing systems.

Below is an illustrative comparison of the embedded emissions in stainless steel and ferrochrome products produced by Outokumpu (group level average), as compared to the global average of similar types of products. This graph shows that there are notable differences in the emission levels at least in the production of stainless steel and ferrochrome, depending on various factors. It should be noted that the figures illustrated below and provided by Outokumpu represent CO_2 emissions including scope 1, scope 2 and scope 3 emissions and that these figures are not as such totally comparable with volumes of embedded emissions to be reported for CBAM purposes in accordance with CBAM methodology (especially the embedded emissions for the operational period of CBAM, which are to be reported excluding scope 2 emissions).



Source: Information received from Outokumpu, based on: Outokumpu's 2022 Sustainability Review; data collected from worldstainless; 3rd party estimate of European peer average emissions in scope for 2019; ICDA calculation for global ferrochrome carbon footprint 2021; Environmental Product declaration Ferrochrome.

It could be seen that the exclusion of the scope 2 emissions, i.e., emissions resulting from electricity sourced to be used in the production of CBAM covered goods, does not fully align with the objectives of the legislation, especially from the stainless steel industry viewpoint. The exclusion might even lead to inequal treatment between the goods produced in the EU and the goods originating from non-EU countries, considering that the production of stainless steel is very energy-intensive process and the electricity used when producing the steel in EU is generally greener compared to other production areas. This would mean that if the scope 2 emissions would be considered when calculating the emissions embedded to imported stainless steel products, the cost of CBAM for the imported products would be considerably higher than it is in the light of the current legislation.

Further, as described in more detail in the Chapter 1, the default values to be used for operational period will be different to default values published for the transitional period. For example, the default values to be applied during the operational period should include different values for different countries/areas to fairly reflect differences in emission levels, increased by mark-up to make use of default values unattractive. In case the default values for the operational period of CBAM would not include sufficient markup compared to actual embedded emissions and/or if geographical and other differences in the emission levels of similar products would not be appropriately reflected in default values, there could be even incentive for CBAM declarants to utilize the default values in the reporting instead of gathering the actual emissions data, especially in case of actual embedded emissions potentially exceeding the default

values. This could in practice involve a risk of discouraging producers and buyers from improving their sustainability.

When discussing on the implications of CBAM it should also be noted that the CBAM legislation contains a possibility to have deduction of “payable CBAM emissions” based on carbon costs paid in the country of origin, if there is for example a carbon tax, ETS or other instrument in use that meets preconditions for deductibility. However, our understanding is that at least currently most of the biggest manufacturing countries for stainless steel industry do not have such instruments in place and thus, impacts of the deduction possibility is at least today not expected to be considerable for the stainless steel industry.

4.3. Other considerations on the potential CBAM implications for stainless steel industry and its global trade

The joint implementation of the CBAM and the ETS reform is designed to boost a greener transition in manufacturing processes within and beyond the EU and is also expected to lead to a reduction in greenhouse gas emissions, also in the stainless steel industry.

As CBAM requires a considerable amount of information to be collected and to be reported by EU importers to the Commission, CBAM and its compliance requirements (such as collection of information of installations, production routes and emissions) can be considered as improving the transparency and traceability of supply chains not only within the companies directly concerned, but also for example between business parties and towards authorities. However, despite the sought positive implications of the CBAM, the mechanism also imposes challenges to the global trade which further affects for example the stainless steel industry and global trade of stainless steel products.

For example, new reporting obligations set by CBAM require a lot of administrational effort from the companies impacted across the markets already in the transitional period and thus, cause additional expenses to the companies even before the beginning of the financial obligations of the CBAM. It is also possible that these administrative obligations will pose some level of risk/uncertainty and trade disruption for the businesses established in the EU not only in the form of the reporting obligation, but also possibly requiring new contract updates, further discussions with suppliers, and even changes in supply chains, for example.

To mitigate the administrative burden resulting from CBAM, the Commission has published default values which can be used in the beginning of the transitional period if the actual embedded emission data is not yet available. However, this is only temporary simplification for a really short period of time until the end of June 2024.

Due to the extensive amount of the detailed information required in the CBAM reporting, the mechanism triggers requests by importers to suppliers and manufacturers to gather information required for CBAM reporting. Required information can include details on, for example, embedded emissions (both direct and indirect, during transitional period at least) production routes, precursors used and manufacturing locations.

CBAM obligations can cause challenges in contract negotiations with suppliers by requiring advanced co-operation to gather detailed information required for CBAM reporting. From supplier’s perspective, CBAM will not only result in requests from EU customers to provide more detailed information on the products than previously – which may include updating or amening contracts – but it will also cause additional administrative work for collection of information requested. Additionally, because of the level of details of the information requested, it is also possible that the requests raise concerns around confidentiality of the information requested and data privacy. Further, due to the nature of the information requested for the purposes of the CBAM reporting and the fact that EU importers are the only persons with reporting

liabilities set in the legislation, some suppliers can even be unwilling to or even able to provide all the necessary information to their EU customers.

EU importers face legal responsibilities, liabilities and even penalty risks based on the availability and correctness of information which is often only available for collection through the importers' non-EU suppliers, if available at all while the suppliers do not have any legal obligation to collect such information and share it with their EU-based customers. This leads to situations where EU importers are required to pursue their suppliers to provide them with information needed and this can often require setting up contractual obligations for example in purchase agreements. In that regard, it can be seen as the system setting potential risks for EU importers as it can be outside of their control whether the information required for CBAM reporting is available and accurate.

CBAM obligations can also indirectly result in needs to make modifications to supply chains. While CBAM is potentially going to increase the cost of goods imported to the EU and EU-produced goods that utilise materials sourced outside of the EU, it can also have an effect to the markets outside the EU by triggering additional costs for goods either produced, refined or supplied via EU in comparison to the non-EU products which are supplied directly to a non-EU destination without any CBAM costs or liabilities. In some cases, CBAM can even increase the costs of the EU production compared to the production outside the EU, especially if the EU producer imports goods to EU for further processing, which, in some cases, can be subject to the ETS, before exporting the final products outside the EU. For example, in a scenario where stainless steel to be delivered to US markets could be alternatively produced in the EU or for example in South America, the landed cost of production of stainless steel in the EU could be further increased by EU ETS and/or CBAM costs.

The above-described disadvantage could, at least to some extent, be potentially avoided by utilizing different customs procedures, for example inwards processing, in which case no CBAM obligations would be caused. It should, however, be noted that even though the CBAM obligations could be avoided with the different customs procedures, it is still possible that the export would be subject to ETS implications. In addition to the possibility to avoid the fore-described disadvantages by utilizing different customs procedures, there have also been some discussions that Commission would be assessing possibilities and need to implement some type of export adjustments avoid potential negative impact caused by EU ETS and/or CBAM for EU operators exporting products subject to EU carbon pricing measures.

In addition to the above, CBAM can cause various disruptions in global trade, for example by triggering delays to imports of covered CBAM goods in case the declarant is not able to fulfil its CBAM compliance duties properly. Further, under certain circumstances the non-compliance with the CBAM reporting obligations can lead to the prohibition to import certain goods to the EU.