Report on the European Union Law Vulnerabilities of the Japanese Green Steel Standard and the JISF Mass-Balance Approach

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ENDORSEMENTS

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EXECUTIVE SUMMARY

KEY FINDINGS

Why Japan's Green Steel Certificates Have Little Value Under the Main EU Climate Rules

01

CARBON CHARGE AT THE BORDER

The certificates give no relief at the EU border. Certified blast-furnace steel is charged on the emissions actually produced in making it.

02

BUYER'S EMISSIONS REPORTING

A buyer cannot count the certificates as a cut in the emissions it reports for the steel it buys.

03

BUYER'S CONSUMER-CLAIM RISK

A buyer that advertises products made with the steel as "low-carbon" takes on the legal risk under EU consumer law.

PRACTICAL RESULT

An EU buyer has little legal or financial reason to pay a "green" premium for steel certified under the Japanese scheme.

1. **The "green" label has little value under EU climate rules.** Japan's largest steelmakers sell part of their output as "green" on the strength of certificates. The steel itself is made in the same coal-fired blast furnaces as the rest. EU rules on the carbon border charge and on company emissions reporting count the emissions actually produced in making a product, so the certificates do not reduce the emissions counted under those rules.

2. **EU importers pay the full carbon charge for certified steel**, exactly like ordinary blast-furnace steel. Under the EU's carbon border charge (CBAM), the certificate provides no reduction in liability calculated on the steel's verified embedded emissions. A proposed extension from 2028 would cover products containing steel, such as car parts and machinery. The European Commission

estimates that approximately €2 billion in imports from Japan would be brought within scope.

3. **EU buyers cannot report a product-specific reduction.** The accounting standard used in EU company climate reports (the Greenhouse Gas Protocol) does not let a buyer use certificates of this kind to reduce the supply-chain emissions it reports. The Science Based Targets initiative's 2026 standard does not treat them as a cut in the emissions of a specific product either.

4. **Consumer claims based on the certificates are at risk**. Since 27 September 2026, new EU consumer-protection rules have substantially increased the risk of climate claims based on offsetting or credit allocation. This affects mainly companies, such as car makers, that advertise products made with the steel to EU consumers.

5. **The risk falls mainly on European buyers.** Those customers have no legal or financial reason to pay more for certified steel.

WHAT THE REPORT COVERS

6. **The Report examines how the "green steel" sold by Japan's three integrated steelmakers** – Nippon Steel, JFE Steel and Kobe Steel – is treated under European Union law. It maps legal risks. It does not bring or recommend any legal action, and it does not cover Japanese domestic law.

HOW THE CERTIFICATES WORK

7. Most steel made by the three companies comes from blast furnaces fuelled by coal. On the companies' own figures, this produces about 2 tonnes of carbon dioxide for every tonne of steel. Steel made from scrap in electric furnaces, the main lower-emission method, produces far less.

8. When one of the companies reduces its emissions somewhere in its operations – for example, by using more scrap iron in a furnace – an independent body verifies the reduction and it is recorded as a certificate. The company then assigns

those certificates to a small share of its steel, which it sells as "green" or "GX" steel under brand names such as NSCarbolex Neutral (Nippon Steel), JGreeX (JFE) and Kobenable Steel (Kobe Steel). The industry calls this "mass balance," but the method works in substance as "book and claim."

9. The certified steel comes out of the same furnaces as the rest, and the companies state that its quality and function are unchanged. What differs is the accounting. The certified volumes are small: JFE's supply of certified steel is under 1% of its output.

10. The Japanese government supports the scheme. Government buyers are told to prefer certified steel when they buy goods made of steel, and public subsidies fund the projects that generate the reductions.

WHY EU LAW IS A PROBLEM FOR THE SCHEME

11. EU climate rules measure the emissions actually produced in making a particular product, at a particular plant, and require that figure to be checked. A certificate that moves a reduction from one part of a company to a different product does not change the emissions of that product. For that reason, the certificates do not reduce CBAM liability or establish a product-specific reduction in the buyer's reported emissions inventory, and consumer-facing claims based on them may face legal challenge. The problem arises under several laws at once, each applying to different companies and on a different timetable.

THE EU CARBON BORDER CHARGE (CBAM)

12. Since 1 January 2026, EU companies importing steel must buy certificates covering the carbon emitted in producing it, at a price linked to the EU's own carbon market. The charge is based on emissions measured at the producing plant and checked by independent verifiers. The rules contain no mechanism for taking the Japanese certificates into account. Certified steel is therefore charged as ordinary blast-furnace steel, and an EU importer paying the full charge gains nothing from the "green" label.

13. Proposals published by the European Commission in December 2025 would go further. One targets practices that attach low-carbon claims to goods sent to the EU while higher-emission goods are sold elsewhere, which the Commission calls "resource shuffling." Another would extend the charge from 2028 to about 180 products that contain steel or aluminium, including vehicle parts and machinery. The Commission estimates that about €2 billion of imports from Japan would be covered. EU governments and the European Parliament have each backed a wider list – about 200 and about 457 product lines respectively – and are now negotiating the final text.

COMPANY CLIMATE REPORTING (CSRD)

14. Large companies operating in the EU must publish audited reports on their climate impact under the Corporate Sustainability Reporting Directive (CSRD). The accounting standards those reports rely on – the Greenhouse Gas Protocol and the Science Based Targets initiative (SBTi) – do not allow a buyer to count certificates of this kind as a reduction in its own emissions. The SBTi's 2026 standard also rules out assigning reductions pooled across a company to a chosen part of its output, which is what the Japanese method does. A European car maker that buys certified steel therefore cannot rely on the certificate to establish a lower product-specific Scope 3 inventory figure, and would risk misstating its reported inventory if it did.

15. Nippon Steel owns two companies in the EU that appear large enough to report in their own right: U. S. Steel Košice in Slovakia (to be renamed Nippon Steel Slovakia) and Ovako in Sweden. On the reported figures, reporting could begin with financial year 2027 and publication in 2028. Group-level reporting may follow from around 2029, subject to the conditions of the third-country undertaking regime. JFE and Kobe Steel have no steelmaking companies in the EU; they are affected through the reports of their European customers.

CONSUMER PROTECTION (EmpCo)

16. Since 27 September 2026, an EU directive known as EmpCo has banned claims that a product has a neutral, reduced or positive effect on the climate where the

claim relies on offsetting. EU law also prohibits misleading claims about a product's characteristics more generally. In 2024 Germany's highest civil court held, in a case about a confectionery maker (Katjes), that cutting emissions and offsetting them are not the same thing, and that any explanation of a "climate-neutral" claim must appear in the advertisement itself. The certificate does not demonstrate that the particular steel was produced through a physically lower-emission process, so a claim that it is low-carbon is open to challenge on both grounds.

17. These rules apply to claims made to consumers, and steel is sold to companies. The risk arises when a company that uses the steel, such as a car maker, advertises its own product to EU consumers as low-carbon because of the certified steel. The Japanese scheme anticipates exactly this use: its guidelines explain how customers can use the certificates to claim a lower carbon footprint or carbon neutrality. In Japan, certified steel is already used in drinks cans, garden sheds, office furniture and cars, including the new Nissan Leaf. Leafs sold in Europe are built at Nissan's plant in Sunderland, in the United Kingdom, and whether they contain certified steel has not been established.

18. In Germany, competitors and consumer associations can go to court directly, without waiting for a regulator. For widespread breaches across several EU countries, fines must be available of at least 4% of the company's annual turnover.

INTERNATIONAL LAW AND TRADE LAW

19. In July 2025 the International Court of Justice advised that States must take due care to regulate the emissions of private companies, and that subsidising fossil fuels can breach their obligations. Japan argued for a narrower reading; the Court did not accept it. The advisory opinion gives no legal claim against the steelmakers themselves, but it is relevant to how the Japanese government certifies and funds the scheme.

20. Under World Trade Organization rules, the EU defends its carbon border charge as an environmental measure. That defence depends on treating steel with the same emissions in the same way. Giving value to the certificates would weaken it, so trade-law pressure makes the EU less likely to accept them.

WHO IS AFFECTED, AND WHEN

The table summarises the position under each body of law.

Principal corporate exposure

EU law	Who is affected	From when	What it means
Carbon border charge (CBAM)	EU importers of steel – often the customer	Since 1 January 2026	Certified steel is charged like ordinary steel; the certificate brings no reduction
Extension of the charge to products containing steel (proposal)	Importers of car parts, machinery and similar goods	From 1 January 2028, if adopted	About €2 billion of imports from Japan covered
Consumer protection (EmpCo)	Companies advertising products to EU consumers – in practice manufacturers using the steel	Since 27 September 2026	Offset-based climate claims may be prohibited under transposed Annex I rules; court action is possible by competitors in Germany
Company climate reporting (CSRD)	Nippon Steel's EU companies, later the whole group; EU customers	Reports on 2027, published 2028; group from about 2029	Certificates cannot be counted as reductions; gaps become visible to investors

Contextual frameworks

Legal Route	Immediate addressee	Timing	Practical Consequence
International law (ICJ advisory opinion, 2025)	The Japanese government	Now	Duty to regulate company emissions; no claim against the steelmakers
Trade law (WTO)	The European Union	If the charge is challenged	The EU's defence of the charge depends on not recognising the certificates

LIKELY OBJECTIONS

21. **"European steelmakers do the same."** Some do. ArcelorMittal (XCarb), thyssenkrupp (Bluemint) and Tata Steel (Zeremis) sell steel under similar certificate schemes. The Report's findings concern how EU law treats this kind of certificate, and apply to those schemes in the same way.

22. **"These are our own reductions, not bought offsets."** The consumer rules look at what the buyer is led to believe. Wherever the reduction was made, it is not

contained in the steel that is sold.

23. **"International standards recognise mass balance."** The international standards body ISO published two separate standards in 2026: one for mass balance (ISO 22095-2) and one for book and claim (ISO 22095-3). The Japanese method fits the second. The steel industry's own global guidance, published by the World Steel Association, states that its approach "cannot strictly follow" the earlier ISO standard.

LIMITS OF THE REPORT

24. The Report does not conclude that the certification method is unlawful in itself. Its finding is that the certificates do not reduce CBAM liability or establish a product-specific reduction in the buyer's emissions inventory, and that consumer-facing claims based on them carry legal risk.

25. Facts about the Japanese companies come from research by Japanese counsel, current to August 2026, and some points are still being verified. Several of the EU measures discussed – including the extension of the carbon border charge and new reporting standards – are proposals or awaiting adoption, and may change.

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TABLE OF ABBREVIATIONS

Advisory Opinion	ICJ, Obligations of States in respect of Climate Change, Advisory Opinion of 23 July 2025
the Act	Act on Promoting Green Procurement (Japan); its Basic Policy confers procurement preference on JISF-certified steel
BF-BOF	Blast furnace-basic oxygen furnace – the integrated, fossil fuel-based (primarily coal-based) steelmaking route
CBAM	Carbon Border Adjustment Mechanism (Regulation (EU) 2023/956)
CBDR-RC	Common but differentiated responsibilities and respective capabilities
CSRD	Corporate Sustainability Reporting Directive
DRI	Direct reduced iron / direct-reduction route
EAF	Electric arc furnace
ECtHR	European Court of Human Rights
EmpCo	Empowering Consumers for the Green Transition Directive (Directive (EU) 2024/825)
ESRS	European Sustainability Reporting Standards
ETS	EU Emissions Trading System
GATT	General Agreement on Tariffs and Trade 1994
GHG	Greenhouse gas
GHG Protocol	Greenhouse Gas Protocol (Corporate Accounting and Reporting Standard)
GX	Green Transformation
ICJ	International Court of Justice
IPCC	Intergovernmental Panel on Climate Change
ISDS	Investor-State dispute settlement
ISO	International Organization for Standardization
ITLOS	International Tribunal for the Law of the Sea
JISF	Japan Iron and Steel Federation
JISF Approach / Mass Balance	A mass balance credits approach involving the pooling of greenhouse gas emissions reduction and the allocation of the verified GHG emission reductions to a proportion of output, certified under the JISF Guidelines for Green Steel (2023); see Section III
METI	Ministry of Economy, Trade and Industry (Japan)
MFN	Most-favoured-nation treatment (Article I:1 GATT)
MLIT	Ministry of Land, Infrastructure, Transport and Tourism (Japan)
NEDO	New Energy and Industrial Technology Development Organization (Japan)
NETIS	New Technology Information System (operated by MLIT)
SBTi	Science Based Targets initiative
the Standard	Japan's Green Steel Standard
UCPD	Unfair Commercial Practices Directive
UNFCCC	United Nations Framework Convention on Climate Change
worldsteel	World Steel Association
WTO	World Trade Organization

I. INTRODUCTION AND SCOPE

1. This report examines the European Union-law dimension of the legal and regulatory risks arising from Japan's Green Steel Standard and, in particular, from the mass-balance methodology promulgated by the Japan Iron and Steel Federation ('JISF').

2. The purpose of this report is to identify and map vulnerabilities. This report is accordingly framed as a risk assessment. It identifies where, and how acutely, the JISF Approach exposes Japanese steelmakers and their EU-facing customers to European Union regulatory, disclosure and consumer-protection law.

3. This report is confined to the law of the European Union (and, where indicated, the national law of Member States) and to the international-law framing of that exposure. It does not address Japanese domestic law or Korean law, save by way of comparison. We have proceeded on the factual and technical premises set out in Section III, drawing on the materials described below. The law is stated as of 30 September 2026.

A. MATERIALS RELIED UPON

4. We have relied upon the Japanese local-counsel report by Tomoko Fukunaga on the domestic-law risks of the Standard; the JISF 'Guidelines for Green Steel Applying the Mass Balance Approach' (2023) and the technical literature on the method; the relevant EU instruments; the International Court's climate Advisory Opinion of 23 July 2025 and Japan's written pleadings in those proceedings; and the WTO-law scholarship cited in Section IX.

5. This report focuses on the European Union and international-law level of analysis. It provides a concise summary of local-counsel analysis of Japanese domestic law, without duplicating it. Where the local-counsel report relies on sources material to the European Union and international-law analysis – the EU instruments, the WTO case-law, and the Korean regulatory, judicial and civil-society materials – we have, so far as possible, verified those primary

sources and cited them directly.[1]

B. DEFINED TERMS

6. In this report: "the Standard" means Japan's Green Steel Standard and the JISF "Guidelines for Green Steel Applying the Mass Balance Approach;" "the JISF Approach" or "Mass Balance" means the methodology described in Section III; "the Act" means the Act on Promoting Green Procurement; "CBAM" means the EU Carbon Border Adjustment Mechanism; "CSRD" and "ESRS" mean respectively the Corporate Sustainability Reporting Directive and the European Sustainability Reporting Standards; "EmpCo" means the Empowering Consumers for the Green Transition Directive; and "the UCPD" means the Unfair Commercial Practices Directive.

1 T Fukunaga, 'Legal Risks in Japan's Green Steel Policy: Greenwashing Brought About by the Act on Promoting Green Procurement and the JISF's Mass Balance Approach' (local-counsel report, 2025). We rely on it for the Japanese factual and domestic-law particulars; the European Union, comparative and international-law characterisation is our own.

II. SUMMARY OF CONCLUSIONS

7. Our principal conclusions are summarised below.

   a. The exposure does not arise from any single instrument. It arises from the structural misalignment of the JISF Approach with the regulatory design of the European Union instruments under analysis, and the EU product-based approach and distinctive focus on emissions attributed to specific production processes in particular. This approach is impossible to reconcile with the apportionment and allocation of credits that are decoupled from the emissions associated with the production of specific physical goods. The exposure is simultaneous under each of the regulatory instruments, and multi-faceted; it is also cumulative and fragmented, falling due at different dates and on different addressees. Taken together, these elements make the trade-mediated risks particularly difficult to manage.

   b. The greatest operational exposure flows from the application of the CBAM. JISF certificates confer no relief at the EU border; and the proposed extension of the CBAM to downstream goods would carry that exposure into the supply chains of Japanese exporters of steel-containing products.

   c. The greatest disclosure exposure is the inconsistency between marketing JISF-certified output as "green" and the treatment of the underlying credits under the GHG Protocol and the SBTi, which exclude book-and-claim from the reported emissions inventory – the SBTi Corporate Net-Zero Standard V2.0 recognising it only as a target-implementation lever in shared, fungible systems, and expressly barring the concentration of pooled attributes onto a subset of output. For Nippon Steel the exposure is likely to be dated: on the reported figures, two of its EU subsidiaries exceed the reporting thresholds in their own right.

   d. The nearest-term consumer-protection exposure is under EmpCo, which since 27 September 2026 has required Member States to apply new prohibitions to specified consumer-facing offset-based

environmental claims. Whether a JISF-based claim falls within the per se prohibition depends on the terms of Annex I and the applicable national transposition; independently, Article 6 of the UCPD may apply where the claim misrepresents the product's actual characteristics. Steel is sold business to business, so the claim is reached chiefly where a downstream manufacturer carries it to consumers.

e. International climate change law, as further elaborated in the context of the 2025 ICJ Advisory Opinion, does not supply a cause of action against the steelmakers. However, it defines the Japanese State's obligations in respect of climate change and will contribute to shaping the way in which these matters are litigated.

f. The trade-law dimension is context for the analysis, and does not found a claim. On the question of mass balance crediting approaches, the EU's trade-law interest and the analysis in this report align.

A. Enforcement map

8. The following table maps the enforcement routes rather than settling any cause of action, which is outside the scope of this report as stated at head I. Its purpose is to show, at a glance, who may act, against whom, under which instrument, and to what effect. Two features are worth noting at the outset: the addressee is in most cases the EU-side purchaser rather than the Japanese steel-maker, and the nearest-term route runs through private parties rather than regulators.

Enforcement Map

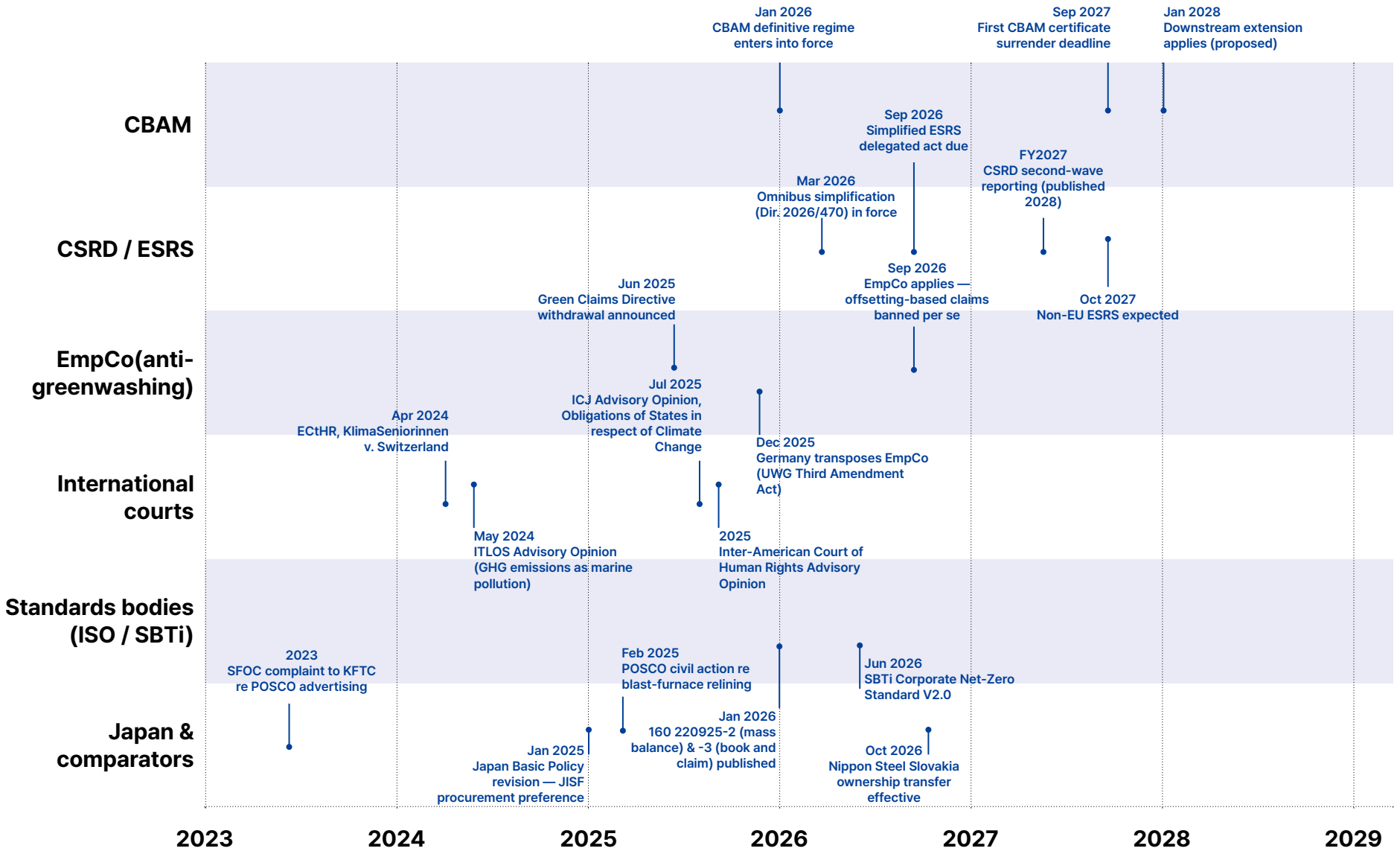


Figure 1 – Enforcement Map regarding Japanese steel producers in the EU market

Against whom	At whose instance	Route and instrument	Consequence
The EU importer or authorised declarant – in practice often the customer, not the mill	National CBAM authority	CBAM Regulation (EU) 2023/956; verified embedded emissions	Certificate liability on actual emissions; the JISF certificate affords no relief
The EU manufacturer incorporating the steel (automaker, machinery)	National CBAM authority, from 2028	Proposed downstream extension, COM(2025) 989	Border cost on the steel embedded in finished goods
The trader making a consumer-facing claim – typically the EU manufacturer	Competitors and consumer associations; national consumer authorities	EmpCo/UCPD as transposed, applicable since 27 September 2026; Annex I and Article 6	Injunction and corrective advertising; fines of at least 4% of turnover for widespread infringements
Nippon Steel's EU subsidiaries (U. S. Steel Košice Ovako); in time Nippon Steel itself	Assurance providers and investors; national supervisors	CSRD/ESRS as amended by Directive (EU) 2026/470	Restatement and qualified assurance; visibility and investor pressure rather than penalty
The Japanese State	Other States; domestic litigants	ICJ Advisory Opinion of 23 July 2025 (duty to regulate private emitters)	No claim against the steelmaker; pressure toward domestic regulation

B. The decision faced, by addressee

Addressee	Decision faced	Timing
The integrated producers	Whether to maintain or revise the certification basis	Ongoing
JISF and the sector federations	Whether to maintain the whole-mill allocation	Ongoing
Downstream buyers (EU automakers and machinery makers)	Whether to procure JISF-certified steel, and how to frame their own EU-facing claims	EmpCo September 2026; CBAM downstream 2028
The Japanese Government	Whether to maintain the procurement preference and the subsidy structure	Ongoing

III. THE TECHNICAL PREMISE

9. The Standard certifies steel as low-carbon by reference to the JISF Approach. Under that approach, greenhouse gas reductions achieved anywhere within a company are allocated, on the books, to selected products through the issue of "reduction certficates." The reduction is not tied to the production line, installation or process that generated it.

10. As per the ISO 22095:2020 standard,[2] a mass balance chain of custody (CoC) model involves the mixture of "sustainable" materials or products (e.g. renewable energy or renewable-based input products) and non-sustainable materials or products (e.g. fossil fuels or fossil fuel-based materials) within a specific site and closed system. Under this approach, a mass-based conversion of the greenhouse gas emissions embodied in the site's overall output enables the attribution of the lower emissions associated with the sustainable materials and products to a portion of the output. As a result, part of the output qualifies and is sold as "lower-emission products."

11. The JISF Standard is an example of a different, *mass balance crediting* approach. In this case, GHG emission reductions achieved anywhere within the organisational boundaries of a firm/facility are tracked, recorded, pooled and incorporated in certificates which are then attributed to a portion of the output. As a result, part of the output qualifies and is sold as "lower-emission products." Nonetheless, under this approach, the relevant emissions reductions are physically decoupled from the systems boundaries, production processes, site, and physical output which later qualifies as 'lower-emission'.

A. "Green steel" and near-zero steel

12. There is no settled legal definition of "green steel." In the technical literature, the term denotes steel produced with emissions curtailed to a level compatible with climate goals, and "near-zero" steel is benchmarked by the International Energy Agency at approximately 0.4 tonnes of CO_2 per tonne

2 ISO 22095:2020, Chain of custody – General terminology and models.

of crude steel for ore-based production and approximately 0.05 tonnes for scrap-based production.

Production basis	Near-zero threshold (t CO_2 / t crude steel)
Ore-based production	≈ 0.4
Scrap-based production	≈ 0.05

Table 1 – "Near-zero" steel benchmarks (IEA)

13. Those thresholds may be set against the International Energy Agency's reference intensities for the principal routes: the integrated blast-furnace and basic-oxygen-furnace (BF-BOF) route at roughly 2.95 tonnes of CO_2 per tonne, the scrap-fed electric-arc-furnace route at roughly 0.29 tonnes, and the natural-gas direct-reduction route at roughly 1.49 tonnes. These are reference values for best available technology, calculated on an assumption of no scrap input and on a wide boundary that takes in the upstream supply of raw materials, fuels and purchased energy. They are used in this report only to compare production routes, alongside the near-zero thresholds computed on the same system boundaries.[3]

14. The producers' own figures sit on a narrower basis. All three report energy-origin Scope 1 and 2 emissions under the methodology of the Keidanren Carbon Neutrality Action Plan applied by JISF, which stops at the steelworks and purchased electricity and deducts emissions attributable to electricity sold externally. On that basis Nippon Steel reports 1.96 tonnes of CO_2 per tonne of crude steel for FY2024, a blended figure that includes its electric-arc subsidiaries; JFE reports approximately 2.0 to 2.1; and Kobe Steel reports 2.4 per tonne of production, a denominator that includes rolled aluminium and copper. Independent estimates for the Japanese blast-furnace route range

3 N Kawabata, 'Evaluating the Technology Path of Japanese Steelmakers in Green Steel Competition' (2023) 49 The Japanese Political Economy 231, 235–236 and note 5, reporting IEA, Achieving Net Zero Heavy Industry Sectors in G7 Members (2022) (BF-BOF c. 2.95 tCO_2/t; scrap-EAF c. 0.29 tCO_2/t; natural-gas DRI-EAF c. 1.49 tCO_2/t; near-zero thresholds of c. 0.4 and c. 0.05 tCO_2/t). The IEA boundary includes ore agglomeration, the production of coke, hydrogen and lime flux, the combustion of by-product gases, and the production of purchased electricity, heat, hydrogen and fuels: Kawabata, ibid, note 5. The 2.95 and 0.29 figures are reference values for current best available technology, calculated for 100% iron and 100% scrap respectively, whereas actual BF-BOF operation charges some 25–30% scrap: IEA, Definitions for Near-Zero and Low-Emissions Steel and Cement, and Underlying Emissions Measurement Methodologies (November 2024) 17 (note 5), 22 (notes 8 and 23).

from about 2.0 to 2.6 before credits.[4] The international standard for plant-level steel intensity, ISO 14404-1:2024, which is based on the worldsteel data-collection method, works in the same way: it divides a plant's net emissions – direct and upstream emissions, less credits for exported by-product gases, electricity and steam – by its crude-steel output. The standard states that its method does not apply to the carbon footprint of any specific steel product. A plant-wide intensity of this kind is therefore the measure the industry's own standard provides, and it says nothing about the emissions of any particular tonne of steel.[5]

B. The Japanese production path

15. The three Japanese integrated producers – Nippon Steel, JFE Steel and Kobe Steel – remain heavily committed to the high-emission BF-BOF route, and have pursued the renovation of that route (the COURSE 50 and Super COURSE 50 programmes, combining partial hydrogen reduction with carbon capture) in preference to a wholesale shift to the lower-emission electric-arc-furnace or hydrogen direct-reduction routes.

16. That programme is sustained by public subsidy, including through the Green Innovation Fund administered by NEDO. The significance for this report is twofold: the Standard certifies as "green" the output of a route that remains, physically, among the most carbon-intensive; and that route is maintained by State subsidy – a matter to which we return under the international-law head.[6]

4 Nippon Steel, 'Response to Climate Change' (website) and Sustainability Data Book 2025 (Scope 1 and 2 intensity of 1.97, 1.88, 1.92, 1.93 and 1.96 (preliminary) tCO_2/t for FY2020–FY2024; aggregation including the group's electric-arc subsidiaries; IPP operations excluded; purchased coke and oxygen included); JFE Holdings, JFE GROUP REPORT 2025, data section, 94 (energy-origin intensity broadly 1.98–2.09 tCO_2e/t for FY2020–FY2024); Kobe Steel, KOBELCO Group ESG Data Book 2024, 20 (2.4 tCO_2/t of production for FY2023 on a production denominator of 6.40 Mt including rolled aluminium and copper; 15.1 Mt attributable to external power sales excluded); Transition Asia, Japan's EAF Steelmaking: Ready for Low-Carbon Growth (March 2025) 11 (2.06–2.61 tCO_2/t for the three blast-furnace producers before credits); Global Efficiency Intelligence, Steel Climate Impact 2025 (Japanese BF-BOF route c. 2.0 tCO_2e/t). The Action Plan methodology covers energy-origin CO_2 only, which does not account for the carbon contained in non-fuel materials: K Tanaka, 'A Comparison Study of EU and Japan Methods to Assess CO_2 Emission Reduction and Energy Saving in the Iron and Steel Industry' (2012) 51 Energy Policy 578.

5 ISO 14404-1:2024, Calculation method of carbon dioxide emission intensity from iron and steel production – Part 1: Steel plant with blast furnace (2nd edn, September 2024), Introduction and cl 7.2.4, Formulae (1) and (2). The standard is based on worldsteel's CO_2 Emissions Data Collection User Guide, version 11; its worked example in Annex C yields 2.431 tCO_2 per tonne of crude steel on the standard's indicative emission factors.

6 Kawabata (n 3) (adherence of Nippon Steel, JFE Steel and Kobe Steel to the BF-BOF route; COURSE 50 and Super COURSE 50; and the ¥2 trillion Green Innovation Fund administered by NEDO).

17. The defining feature of the JISF mass balance crediting approach is the separation of environmental value (specific emissions reductions) from the physical product (systems boundaries of the facility, and specific emissions embedded in a product). It is, in substance, a book-and-claim method: emissions reduction certificates are selectively allocated to a portion of output irrespective of the physical flow of carbon.[7]

Element	Description
Defining feature	Separation of environmental value from the physical product
Method	Book-and-claim, as opposed to chain-of-custody method
Mechanism	Certificates are selectively allocated to a portion of output irrespective of the physical flow of carbon

Table 2 – Defining feature of the JISF Approach

18. The "green" attribute is an accounting allocation detached from the physical product – the defining mark of book-and-claim. The attribute may be generated by measures unrelated to decarbonising steelmaking. Further, placing upstream emissions outside the boundary inflates the certified share.[8]

19. The certified pool is small relative to output. No aggregate figure for certificates issued has been identified in the public sources reviewed, although the JISF guideline requires each organisation to disclose its reduction projects and verified volumes. JFE's verified reductions for FY2024 were 1,341 thousand tonnes of CO_2e, generated by the expanded use of cold iron sources; its available supply of certified steel, some 200,000 tonnes, is under 1% of its crude-steel output, against a target capacity of 3 million tonnes a year by FY2030. Reductions achieved across the undertaking are

7 The JISF Approach is internationally classified as 'book and claim', and is to be distinguished from site-specific or segregation-based chain-of-custody 'mass balance' approaches recognised in EU law (for example in relation to recycled and bio-based content), which preserve a physical link between the claimed attribute and the product.

8 For an academic application of the method to a Malaysian cold-rolling mill, see S Mohd Alias, Y C Gan and M A Zubir, 'Green Steel Production Using Mass Balance Approach' (2025) 122 Chemical Engineering Transactions 487, 488–491 (reductions from measures that include rooftop solar power allocated to some 15.5% of a year's output, on the 2023 edition of the JISF guideline). See also JISF, GX Steel Guideline Ver. 4.1 (8 January 2026) 2 and 9–11 (reduction projects to involve process or raw-material and fuel conversion within the organisation; operational improvements and external certificates excluded; no application to products of a process without physical connection to the reduction project).

thus concentrated onto a small fraction of physically unchanged output.[9]

20. It follows – and is common ground in the materials – that JISF-certified "green steel" is physically identical to conventional blast-furnace steel: the same process, the same embedded emissions. The certificate alters the accounting, not the product.

21. The Standard acquired regulatory force through the Basic Policy under the Act, as revised in January 2025 and amended in February 2026, which makes the use of steel carrying a JISF-verified reduction volume the higher standard (Criterion Value 1) for goods made of steel in public procurement.[10]

C. Sensitivity and the wider tradition

22. Two further points bear on what follows. First, the reported figures depend on the accounting method. For one and the same mill, calculated energy savings and CO_2 emissions have been shown to vary by roughly 4% to 14% according to the method and the system boundary chosen. A "green" figure can therefore be relied on and verified only as far as its method allows, and the figure used in marketing may differ from the one used in regulatory disclosure.[11]

23. Second, the Mass Balance Approach sits within a wider Japanese tradition of voluntary, intensity-based and sector-based climate accounting, which has favoured business-as-usual baselines over absolute caps and has counted "avoided" or "enabled" emissions – reductions attributed to the transfer of technology abroad, or to the downstream use of high-performance steel – toward the industry's climate "contribution." Claims of that character raise

9 Nippon Kaiji Kyokai (ClassNK), Statement of Conformity Assessment (JFE Steel Corporation) (6 August 2025) 1; JFE Holdings, JFE Group Environmental Management Strategy 2025, 16; Transition Asia, Low-Carbon Steel Development in Japan (November 2023) 8 (planned supply of 200,000 t for JFE in FY2023, 300,000 t for Nippon Steel, and 8,000 t for Kobe Steel in FY2022 rising to 1 Mt by 2030); JFE Holdings, JFE GROUP REPORT 2025, 97 (non-consolidated crude-steel output of 21.95 Mt in FY2024); JISF, GX Steel Guideline (n 8) 10.

10 Basic Policy on Promoting Procurement of Eco-Friendly Goods and Services (Cabinet decision, January 2025, as amended February 2026) 9 and Note 1 ("a verified reduction volume attached in accordance with the JISF GX Steel Guideline"). The JISF guideline, formerly the Guidelines for Green Steel upon the Application of the Mass Balance Approach, was renamed at Version 4.0 (28 October 2025).

11 Tanaka (n 4) (calculated energy and CO_2 differing by roughly 5–15% and 4–14% respectively across the EU per-activity, EU whole-installation and JISF whole-mill methods).

distinct anti-greenwashing concerns, considered under head VII.[12]

24. Two propositions follow, and govern the remainder of this report. First, any EU instrument that measures the product-specific carbon content of steel (embedded GHG emissions) will not recognise a JISF certificate. Second, any EU rule that prohibits the detachment of an environmental claim from the physical product will be engaged by the JISF Approach.

12 T Kikkawa and others, 'Voluntary or Regulatory? Comparative Business Activities to Mitigate Climate Change' (2014) 48 Hitotsubashi Journal of Commerce and Management 55; and Kawabata (n 3) (voluntary action plans; the sector-based approach; business-as-usual baselines; and the 'eco-solutions/eco-products' and avoided-emissions framing).

IV. ANALYTICAL FRAMEWORK

25. International accounting and standardisation frameworks have granted some recognition to book-and-claim approaches, of which mass balance crediting approaches constitute a sub-set.[13] The ISO 22095 series treats book-and-claim as a distinct chain-of-custody model in its own right, and the SBTi Corporate Net-Zero Standard V2.0 (11 June 2026) recognises book-and-claim as a legitimate lever for target implementation where emissions sit in shared, fungible systems.

26. Nonetheless, an analysis of the European Union regulatory framework offers a very different picture. Reliance in the Standard and JISF Guidelines on a hybrid mass balance crediting approach, as explained throughout the following sections, results in a deep exposure of Japanese steel producers/products to the EU regulatory framework and associated regulatory burdens. CBAM in its definitive regime, its proposed downstream extension and its anti-circumvention rules; EmpCo's prohibition of offset-based claims; the exclusion of book-and-claim from buyer-side inventory accounting under the GHG Protocol; and the Commission's Steel and Metals Action Plan, with its lead-market and carbon-intensity-label initiatives, all point in the same direction.[14] The exposure is therefore *simultaneous* under each of the regulatory instruments, and *structural* in nature.

27. As a second point, it is worth stressing that the exposure is *multi-faceted*. The trade-mediated effects of the European Union regulations under analysis reverberate on Japanese producers, European downstream producers, European consumers, as well as the Japanese state. Additionally, different authorities across the European Union Member States are entrusted with the implementation of the regulatory arrangements. From a risk management

13 See n 7.

14 See, in the same direction: CBAM (Regulation (EU) 2023/956, as amended); EmpCo (Directive (EU) 2024/825); the GHG Protocol Corporate Value Chain (Scope 3) Standard; the SBTi Corporate Net-Zero Standard (2026); and the Commission's European Steel and Metals Action Plan (Communication, 19 March 2025), which expressly warns against non-EU producers 'greenwashing' metals to appear low-carbon while relying on high-emission energy, and whose public-procurement lead-market criteria are to be taken forward through the forthcoming Industrial Decarbonisation Accelerator Act. On the contested state of the standard-setting, see also the civil-society open letter opposing mass-balance greenwashing of coal-based steel (SteelWatch and others, The Hague, 5 June 2025), which records that the SBTi, GHG Protocol, ISO and World Steel Association revisions are under active industry lobbying led by JISF and Nippon Steel.

perspective, no single compliance step can remedy the exposure and no single actor can reduce it.

V. EXPOSURE UNDER THE CARBON BORDER ADJUSTMENT MECHANISM

A. Overview

28. In May 2023, the European Union institutions adopted the CBAM Regulation. The scheme's transitional application period, during which only the reporting obligations of Articles 33 to 35 applied, came to an end in December 2025. As of 1 January 2026, the European Union CBAM has entered its definitive regime of application. It is the first carbon border measure to see the light.[15]

29. The CBAM aims to tackle prospective carbon leakage, which might involve the substitution of domestic production of carbon-intensive goods with imports from higher emitting countries, domestic or international cross-sectoral spill-overs in different countries, and the potential relocation of production to countries with more lenient decarbonisation standards.[16] It does so by levelling the economic playing field;[17] it thus ensures that products imported into the EU bear equivalent economic costs as those borne by EU facilities (and, therefore, EU products) under the EU Emission Trading System (ETS).

30. The ETS, a cap-and-trade regime, involves an overall "cap" on the GHG emissions of facilities operating in carbon-intensive sectors in the European Union, and "trade" in ETS allowances.[18] European facilities subject to the scheme must monitor, report and verify their GHG emissions under the complex rules laid out in Commission Implementing Regulations (EU)

15 The UK CBAM will start applying, without a transitional phase, on 1 January 2027. For more information on this scheme, see the dedicated page on the UK Government website, at https://www.gov.uk/government/publications/factsheet-carbon-border-adjustment-mechanism-cbam/factsheet-carbon-border-adjustment-mechanism.

16 See PR Shukla, J Skea et al (eds), Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge, CUP, 2022), 124.

17 GC Leonelli, 'Practical Obstacles and Structural Legal Constraints in the Adoption of 'Defensive' Policies: Comparing the EU Carbon Border Adjustment Mechanism and the US Proposal for a Border Carbon Adjustment' (2022) 42 Legal Studies 696.

18 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC [2003] OJ L 275, as amended throughout the years. As at 30 September 2026, the European Commission has published a proposal for amendment under the ETS review process: see European Commission, Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC and Decision (EU) 2015/1814 as regards driving competitiveness and cost-effective decarbonisation COM(2026) 616 final (17 July 2026), 2026/0212(COD).

2018/2066, 2018/2067 and 2025/1192.[19] They must then surrender ETS allowances on a yearly basis to cover their GHG emissions.

31. The CBAM partially mirrors and aims to replicate the functioning of the ETS, while transposing its operation from the (domestic) *facility* level and relevant GHG emission *outputs to the product*-based level and the GHG emission *embedded* in imports. The scheme thus involves a consideration of the "explicit" (i.e. expressly monetised) carbon price paid by facilities in the European Union, and a calculation of the greenhouse gas emissions embedded in the imported products.

32. At the practical level, the CBAM operates as a regulatory border adjustment.[20] After the 2025 amendments, its scope of application has been narrowed down with a new annual mass-based threshold of 50 tonnes of CBAM goods. As a result, the scheme only covers importers of more than 50 tonnes of CBAM goods per year.[21] It lays out a mandatory requirement for CBAM declarants to purchase and surrender CBAM certificates to cover all of the GHG emissions embedded in imported products. Authorised CBAM declarants must submit a yearly CBAM declaration, detailing the total quantity of covered goods imported, their embedded emissions, and the total and corresponding number of CBAM certificates to be purchased and surrendered.[22]

33. The price of the CBAM certificates is calculated to correspond to the average closing price of EU ETS allowances on the common auction platform for each calendar week.[23] This fluctuating value is further adjusted to take account of the continued distribution of free ETS allowances to EU facilities.[24] These features of the CBAM system seek to replicate or approximate the ETS arrangements.

19 Commission Implementing Regulation (EU) 2018/2066 of 19 December 2018 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 601/2012 [2018] OJ L 334; Commission Implementing Regulation (EU) 2018/2067 of 19 December 2018 on the verification of data and on the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council [2018] OJ L 334; and Commission Implementing Regulation (EU) 2025/1192 of 18 June 2025 amending Implementing Regulation (EU) 2018/2067 as regards certain aspects on the verification of data and on the accreditation of verifiers OJ L, 2025/1192, 19.6.2025.

20 See the analysis of the trade-law dimension at IX, and Leonelli (n 17).

21 Article 2a, CBAM Regulation.

22 Articles 4, 5, 6 and 25, CBAM Regulation.

23 Article 21, CBAM Regulation.

24 Article 31, CBAM Regulation.

34. Turning to the embedded emissions, the scheme covers both "direct" emissions from the "production processes of goods, including emissions from the heating and cooling that is consumed during the production processes,"[25] and "indirect" emissions associated with the generation of electricity that is consumed during the production processes of the imported goods.[26] The complex CBAM rules governing the monitoring, reporting and verification of embedded direct emissions mirror the rules applied to European Union installations under the ETS: hence, third country facilities *only* have a choice between the ETS derived *calculation or measurement* methods.[27] Annexes II and III to the Implementing Regulation set out the relevant systems boundaries and methodologies to attribute emissions to specific production routes and to specific CBAM goods. Until 31 July 2024, reporting CBAM declarants could use different methods to monitor, report and verify emissions; until 31 December 2024, installations and declarants were also afforded greater leeway. These flexibilities have now come to an end.

35. If documenting the actual verified emissions embedded in the products is impossible, (punitive/disadvantageous) default values shall apply.[28] For indirect emissions, reference is made instead to the default emission factors calculated by the IEA for the country of origin of the electricity, the specific emission factors of the grid of the country of origin, or the specific emission factors of the electricity employed by the facility.[29]

36. The last relevant consideration pertains to the adjustment for "explicit" carbon prices already paid by a facility in the country of origin of the product. CBAM declarants may claim a reduction in the number of CBAM certificates to be surrendered to take account of any "explicit" carbon price paid in the country of origin of the products.[30] "Explicit" carbon prices are associated with compliance with carbon pricing mechanisms, and the CBAM Regulation defines a "carbon price" as "'the monetary amount paid in a third country,

25 Article 3(21), CBAM Regulation.
26 Article 3(34), CBAM Regulation.
27 Commission Implementing Regulation (EU) 2025/2547 of 10 December 2025 laying down rules for the application of Regulation (EU) 2023/956 of the European Parliament and of the Council as regards the methods for the calculation of emissions embedded in goods OJ L, 2025/2547, 22.12.2025, Articles 3 and 4(1) and Annexes II and III.
28 See Commission Implementing Regulation (EU) 2026/1740 of 20 July 2026 correcting Implementing Regulation (EU) 2025/2621 as regards Annexes I and IV thereto OJ L, 2026/1740, 31.7.2026.
29 See Annex IV, CBAM Regulation.
30 See Article 9, CBAM Regulation.

under a carbon emissions reduction scheme, in the form of a tax, levy or fee or in the form of emission allowances under a greenhouse gas emissions trading system, calculated on greenhouse gases covered by such a measure, and released during the production of goods."[31] "Implicit" carbon prices, i.e. the decarbonisation costs faced by facilities to comply with regulatory standards and specific permitting conditions in countries that have not set a carbon pricing system in place, are *not* accounted for.[32]

B. The CBAM and the JISF Approach

37. The preceding overview of the CBAM enables an in-depth assessment of the exposure of Japanese products and producers under the Standard and JISF Guidelines mass balance crediting approach.

38. First, the CBAM's distinctive economic level playing field rationale bears directly on the analysis. As illustrated above, the CBAM aims to ensure that imported products bear *equivalent* carbon costs to the ones borne by European Union facilities/products and carefully *mirrors* the operation of the ETS. "Implicit" carbon prices are neither recognised nor quantified for the purposes of granting a CBAM rebate, as the European Union relies on carbon pricing (the ETS). Both the CBAM monitoring, reporting and verification rules *and* the system boundaries and methodologies to attribute emissions to specific production routes and corresponding CBAM goods perfectly replicate the ETS rules; the goal is to ensure that emissions calculations align, and European producers do not find themselves at a disadvantage.[33] Nor has the European Union to date concluded any Mutual Recognition Instrument to ease the verification cycle and recognise third country accreditation bodies.

39. Taking the inflexibility of the arrangements and the economic rationale of the CBAM into due consideration, it is impossible to foresee any potential

31 See Article 3(29), CBAM Regulation.

32 This element in the regulatory design of the scheme caused considerable geopolitical and economic friction with the Biden Administration. On the question of 'implicit' carbon prices and for an analysis of the methodological difficulties in their accounting under the CBAM, see Leonelli (n 17).

33 Despite, again, considerable geopolitical and economic frictions – particularly in cases where third country facilities have to comply with different and conflicting *domestic* monitoring, reporting and verification standards. For a more detailed analysis see GC Leonelli, Environmental Leverage in Times of Climate Crisis. Product Standards, Carbon Border Measures and Preferential Trade Agreements (Oxford, Hart Publishing, 2026), chapter 3.

consideration or recognition of the Japanese "green steel" status, or any potential CBAM rebates. The exposure of Japanese products and producers is thus unavoidable. EU actors anticipating or bearing full CBAM liability on the embedded emissions have no reason to pay a "green" premium for, or to prefer, JISF-certified steel.

40. The second and connected consideration is methodological in nature, and pertains to the structural divergencies between the operation of the ETS/CBAM and the JISF mass balance crediting approach. The CBAM's monitoring, reporting and verification rules capture the GHG emissions embedded in imported goods by attributing installation-level emissions, under specific routes of productions, to sub-installation and commodity lines. By design, the CBAM aims to account for the carbon content (embedded emissions) of the specific goods imported. This approach is impossible to reconcile with a mass balance crediting approach. A reduction credit allocated on the books to a consignment does not reduce the embedded emissions that the CBAM measures: JISF certificates are therefore irrelevant to CBAM liability.

41. The third point relates to the environmental credentials of the CBAM and the flaws of the JISF approach. Besides levelling the economic playing field to prevent carbon leakage, the CBAM aims to promote decarbonisation by third country facilities, raise the ambition of national decarbonisation standards in third countries, discourage the importation of highly carbon-intensive goods by raising their final price, and promote the uptake of carbon pricing at the transnational level.[34] If assessed in light of these policy goals, there is no incentive for the European Union institutions to recognise the value of a mass balance crediting approach such as the one reflected in the JISF standard.

42. As noted in III, the defining feature of the JISF mass balance crediting approach is the separation of environmental value (specific emissions reductions) from the physical product (systems boundaries of the facility, and specific emissions embedded in a product). Under this model, emissions reduction certificates are selectively allocated to a portion of output irrespective of the physical flow of carbon. This approach has been the object of criticism on environmental

34 CBAM Regulation, Recitals (14), (72), (73) and (74).

integrity, additionality, traceability and transparency grounds.[35]

43. Unlike mass balance chain-of-custody approaches, mass balance crediting lends itself to greenwashing claims to the extent that it can arbitrarily qualify specific emissions reductions as legally relevant, and equally arbitrarily apportion the resulting certificates to offset greenhouse gas emissions in distinct production processes. This can undermine the environmental integrity of the approach, as the relationship between "avoided" greenhouse gas emissions or "enabled" greenhouse gas emissions reductions and the allocation of certificates to specific goods is at best tenuous.

44. Mass balance crediting is also difficult to reconcile with the principle of additionality, as the ability of the credits to promote and drive "additional" decarbonisation projects has come under challenge from market and societal stakeholders.[36] Finally, insufficiently rigorous criteria and lack of independent oversight over implementation threaten both traceability and transparency.[37]

45. This consideration adds a further layer to the analysis, and confirms and reinforces the point surrounding the incompatibility between the CBAM approach and mass balance crediting. On these grounds, the exposure of Japanese "green" steel is bound to persist. Even to the extent that the CBAM directly promotes the uptake of carbon pricing in third countries, with Japan currently incorporating the steel sector under its emerging ETS, the European institutions have no incentive to give any recognition to mass balance crediting.

46. The anti-circumvention measures proposed by the European Commission in December 2025 include a definition of "abusive practices" and lay out enhanced traceability requirements. The goal of the European institutions is to prevent "resource shuffling;" this may materialise in cases where low-carbon attributes are artificially apportioned to European Union-bound products, and/or when "greener" products are destined to the European Union and more carbon-intensive ones are sold on domestic or third-country markets.[38] As

35 For a more detailed analysis of these points, see Climate Group SteelZero, SteelZero Commitment and Procurement Framework (2025), 8-12 in particular.

36 Ibid.

37 Ibid.

38 For a legal definition, see California Code of Regulations (17 CCR § 95802(a)).

can be readily inferred, both scenarios can be associated with the flaws of the JISF mass balance crediting approach. The European Commission is thus seeking to legislate against the environmental flaws that the JISF standards embody.

47. As a final point, it is worth noting that the exposure of Japanese "green" steel is set to widen. On 17 December 2025, the European Commission proposed to extend the scope of application of the CBAM to cover 180 steel and aluminium intensive downstream products (machinery, vehicle components, appliances and the like, averaging around 79% steel or aluminium content by composition). If adopted, this downstream expansion would apply as of 1 January 2028.[39] The Council has since agreed its general approach (12 June 2026), covering some 200 products and adding an annual review from 2028, and the European Parliament adopted its first-reading position on 15 September 2026, covering some 457 product lines and tightening the anti-circumvention rules; the final list is being negotiated between the two.[40]

48. If adopted, this policy proposal would magnify the exposure under analysis in this section. A Japanese automaker or machinery manufacturer that has procured JISF-certified "green steel" would, from 2028, face CBAM liability on the embedded steel in its EU-bound products; nor would the certificate grant any economic relief. The "greenwashed input" would then become a quantified cost borne down the supply chain.

C. Legislative status

49. The downstream extension and the anti-circumvention measures are, at the date of this Report, a legislative proposal proceeding under the ordinary legislative procedure, and subject to amendment.

39 Commission proposal to amend Regulation (EU) 2023/956 as regards the extension of its scope to downstream goods and anti-circumvention measures, COM(2025) 989 final (17 December 2025), procedure 2025/0419(COD); legal basis Article 30(3) of the CBAM Regulation; the downstream extension to apply from 1 January 2028 (per the proposal's own provision). For downstream goods, CBAM attaches only to the emissions embedded in the steel or aluminium precursors, not to fabrication or assembly – the Commission's worked illustration being the steel in an imported car door. Pending the ordinary legislative procedure.

40 Council of the EU, general approach of 12 June 2026 on COM(2025) 989; European Parliament, first-reading position of 15 September 2026 (464 votes to 50, 159 abstentions); European Parliamentary Research Service, 'Extension of CBAM scope to downstream goods and anti-circumvention measures' (At a Glance, September 2026).

VI. EXPOSURE UNDER SUSTAINABILITY DISCLOSURE (CSRD / ESRS)

50. The disclosure exposure is the strongest medium-term vulnerability, but its scope and timing were materially altered by the Omnibus simplification, now enacted as Directive (EU) 2026/470 and in force since 18 March 2026, and must be stated with care.

51. As matters stand, the reporting obligation under CSRD attaches to undertakings exceeding 1,000 employees and €450 million turnover; the scope of reporting undertakings was reduced from approximately 50,000 to approximately 5,000; second-wave reporting was deferred to financial year 2027 (published 2028); and listed small and medium-sized enterprises were removed from scope. Two further features of the amended regime should be noted. Undertakings of 1,000 employees or fewer are subject to a value-chain cap and cannot be required to provide information beyond the voluntary standard – which does not assist the largest Japanese groups, since they are precisely the undertakings that exceed the raised thresholds. The simplified ESRS were adopted by Commission Delegated Regulation (EU) 2026/1563 of 3 July 2026, published in the Official Journal on 21 September 2026; they enter into force on 10 November 2026 and apply to financial years beginning on or after 1 January 2027.[41]

52. A Japanese-parented steel group is most likely to be captured by one of two routes: (a) through a large EU subsidiary that itself meets the EU thresholds, in which case second-wave timing applies; or (b) through the third-country-undertaking regime, which – as per the Omnibus Directive – now applies to non-EU groups with net EU turnover above €450 million operating through a qualifying EU subsidiary or branch that itself exceeds €200 million in net turnover.

53. The start date for the application of the third-country route is more remote in time. The standards governing it – the non-EU ESRS – are presently paused,

41 Omnibus simplification: Directive (EU) 2025/794 ('stop-the-clock') and the amending 'content' Directive (EU) 2026/470 (in force 18 March 2026).

and are not expected before October 2027, with first reporting around 2029.[42] The obligation is real, but it arises later than under the EU-subsidiary route.

54. The Japanese filings now allow the question to be answered producer by producer. Nippon Steel is captured by the first route. Through United States Steel Corporation, consolidated since June 2025, it wholly owns U. S. Steel Košice, s.r.o., an integrated steelworks in Slovakia with some 7,500 employees and 2025 turnover of approximately €2.9 billion, which is to be held directly and renamed Nippon Steel Slovakia s.r.o. from October 2026. It also wholly owns Ovako Group AB in Sweden, with some 2,650 employees and turnover of about €0.9 billion. On the reported figures, each appears to exceed the thresholds in its own right. For the Slovak company, second-wave reporting for FY2027, published in 2028, is the likely date, subject to the Slovak implementing law and the statutory accounts. Nippon Steel's Europe revenue of ¥655.9 billion in FY2025 would place the parent well above the third-country threshold if, and to the extent that, it was generated in Member States; the category includes non-EU Europe and is not broken down further. Table 3 sets out the position for each entity.[43]

55. The two routes reach different regulatory targets, and the distinction matters for the present argument. The EU-subsidiary route brings the group's European operations within assured ESRS reporting; it does not, of itself, require disclosure of the parent's Japanese marketing. The group-wide claim can only be fully reached via the third-country route, whose application is further in time. JFE and Kobe Steel are in a different position altogether: neither has a steelmaking subsidiary in the Union, and neither discloses European turnover separately. Their capture is not ascertainable from the filings, and it is unlikely; their disclosure exposure runs principally through

42 The non-EU ESRS (third-country undertakings) are presently paused and not expected before October 2027; first reporting for non-EU groups is currently anticipated around 2029 (in respect of FY2028 data). A Japanese-parented group is therefore more likely to be caught earlier, if at all, through a large EU subsidiary.

43 Nippon Steel, Securities Report (101st term, filed 23 June 2026) 35, 55, 104 and 154–155 (Europe revenue on a customer-location basis of ¥345,076 million in FY2024 and ¥655,858 million in FY2025; U. S. Steel consolidated from June 2025); Nippon Steel, Integrated Report 2025, 29 and 31, and Data Book 2025, 4 and 11; Nippon Steel, press release of 13 May 2026 (transfer of U. S. Steel Košice to direct ownership and renaming; 2025 turnover of c. €2.90 billion; 7,573 employees); Ovako, sustainability reports (turnover of c. €0.9 billion; FY2025 report in ESRS-aligned form with KPMG assurance). A commercial database records a lower 2025 turnover for U. S. Steel Košice (€2.397 billion); both figures exceed the threshold, and the statutory accounts are the authoritative source.

their EU customers' reporting, considered at head IX(D).[44]

56. The overall risks, however, do not exclusively depend on timing. ESRS disclosure is product-aware, founded on double materiality, and subject to assurance; it requires auditable data on the actual emissions profile of the undertaking.

57. The decisive point is that the credits underlying the JISF Approach are not recognised where it matters. The GHG Protocol Corporate Value Chain (Scope 3) Standard prohibits the accounting of greenhouse-gas trades within the inventory boundary.[45] The Science Based Targets initiative, in its 2026 Corporate Net-Zero Standard, draws the same line: book-and-claim certificates do not reduce a company's reported Scope 3 figure; only chain-of-custody models establishing physical traceability, or averaging across a pool from which the company actually sources, may enter the inventory.[46]

58. That distinction – physical-pool mass balance, which may be recognised, against corporate book-and-claim, which may not – is precisely the distinction between EU-type mass balance and the JISF mass balance crediting approach.

59. The consequence is a vulnerability the steelmaker cannot resolve in its own favour. The environmental attribute it sells as "green steel" cannot simultaneously count toward its own, or its customers', reported emissions reductions under the standards to which those companies have committed. The marketing claim and the disclosure obligation pull in opposite

44 JFE Holdings, Securities Report (24th term, filed 19 June 2026) 7–9, 134 and 160–161 (Standardkessel Baumgarte Holding GmbH, an engineering holding company in Mülheim, as the only consolidated subsidiary in a Member State; revenue disaggregated only as "Japan" and "Other", the latter ¥1,596,241 million in FY2025); Kobe Steel, Securities Report (173rd term, filed 18 June 2026) 9–10 and 160 (Quintus Technologies AB and Kobelco Construction Machinery Europe B.V.; revenue disaggregated as 'Japan', 'Americas' and 'Other'); KOBELCO Group ESG Data Book 2025, 26–27. Crude-steel output for scale: Nippon Steel, global capacity of c. 82 Mt after the U. S. Steel acquisition; JFE, 22.55 Mt (FY2025, consolidated); Kobe Steel, 5.96 Mt.

45 GHG Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011), which prohibits accounting for GHG trades within the Scope 3 inventory boundary.

46 SBTi Corporate Net-Zero Standard (Version 2, 2026): book-and-claim certificates do not reduce reported Scope 3 emissions; only physical chain-of-custody, or pool-averaging where the company sources from that pool, may enter the inventory. Mass balance within such a pool may qualify; corporate-level book-and-claim does not. This is the present position, but it is contested: the GHG Protocol, SBTi, ISO and World Steel revisions are the subject of active lobbying by JISF and Nippon Steel to admit credit-based accounting, opposed by the civil-society open letter of 5 June 2025 (n 14). The exclusion is therefore the current standard, and may change.

directions, and double-materiality reporting is the mechanism by which that inconsistency surfaces.

60. For Nippon Steel the exposure is therefore considerable; the disclosure regime renders visible, and auditable, the gap between the claim and the physical reality, first for its European operations and in time for the group. For JFE and Kobe Steel, it lands indirectly, through the reporting of their EU customers.

Company	Basis of potential CSRD exposure	EU nexus identified	Applicability assessment
Nippon Steel Corporation (parent, Japan)	Third-country parent undertaking route (CSRD Art. 40a), triggered by EU turnover generated through qualifying subsidiaries or branches	Europe revenue on a customer-location basis of ¥655.9 billion in FY2025 (¥345.1 billion in FY2024), a category that includes non-EU Europe; qualifying EU subsidiaries as below	**Likely in scope** once the non-EU ESRS are adopted (first reporting around 2029), subject to the EU/non-EU split of the Europe revenue
U. S. Steel Košice, s.r.o. (Nippon Steel Slovakia s.r.o. from 1 October 2026) – EU-incorporated subsidiary	Direct EU large-undertaking route (CSRD core scope)	Slovakia; integrated steelworks; ≈7,573 employees; turnover ≈€2.9 billion (2025, per Nippon Steel)	**In scope in its own right** – exceeds both post-Omnibus thresholds (1,000 employees / €450m turnover) independently of the parent; second reporting wave (FY2027, published 2028), subject to Slovak implementing law and the statutory accounts
Ovako Group AB (Sweden) – EU-incorporated subsidiary	Direct EU large-undertaking route (CSRD core scope)	Sweden and Finland; scrap-based electric-arc production (≈97% scrap), unconnected to the JISF Approach; 2,655 employees; turnover ≈€0.9 billion	**In scope in its own right** – already publishes an ESRS-aligned report under assurance (FY2025)
JFE Steel Corporation / JFE Holdings, Inc.	Third-country parent route only, if the aggregate EU-turnover and subsidiary thresholds are met	Only EU consolidated subsidiary is Standardkessel Baumgarte Holding GmbH (Germany; engineering); revenue disclosed only as 'Japan' and 'Other' (FY2025 'Other' ¥1,596 billion across all regions)	**Uncertain / likely out of scope** – EU turnover is not separately disclosed and cannot be derived from the statutory filings; registry data for Standardkessel pending

Company	Basis of potential CSRD exposure	EU nexus identified	Applicability assessment
Kobe Steel, Ltd. (Kobelco)	Third-country parent route only, if the aggregate EU-turnover and subsidiary thresholds are met	EU subsidiaries in industrial machinery, welding consumables and construction-machinery sales only (including Quintus Technologies AB and Kobelco Construction Machinery Europe B.V.); no EU steelworks	**Likely out of scope** – smallest of the three producers (crude steel ≈6 Mt, FY2025); steel and aluminium sales outside Japan and the Americas ¥203.5 billion (FY2025)

Table 3 Japanese steel producers: applicability under CSRD (post-Omnibus thresholds)

VII. EXPOSURE UNDER EU ANTI-GREENWASHING LAW

61. The Green Claims Directive, often cited in this context, does not govern the matter. That proposal has not been formally withdrawn, but remains stalled: the Commission announced its intention to withdraw it on 20 June 2025, and the concluding trilogue was cancelled.[47] It is not in force, has no adoption timetable, and must not be treated as the operative instrument.

62. The instrument that governs is EmpCo, which is adopted, in force, and has applied since 27 September 2026, irrespective of the fate of the Green Claims Directive.[48]

63. EmpCo amends the "blacklist" in Annex I to the UCPD – the list of commercial practices that are unfair, and therefore prohibited, in all circumstances. As amended, that list prohibits claims that a product has a neutral, reduced or positive impact on the environment on the basis of offsetting. Such claims thereby become misleading, automatically.

64. That the JISF Approach falls within the prohibition must, however, be demonstrated rather than assumed. Annex I is directed in terms at claims resting on offsetting outside the product's value chain, whereas JISF certificates allocate reductions achieved within the certifying undertaking itself; a Japanese producer may therefore claim that the credits certify internal greenhouse gas emissions abatement.

65. The objection does not remove the consumer-protection exposure, but the two legal routes should be distinguished. First, where the conditions of the Annex I prohibition are met, a claim based on offsetting may be prohibited in all circumstances. Second, and independently, Article 6 of the UCPD may apply where a claim presents the allocated environmental attribute as a physical

47 The Commission announced its intention to withdraw the Green Claims Directive proposal (COM(2023) 166) on 20 June 2025; the concluding trilogue was cancelled. The proposal has not been formally withdrawn, but remains stalled: the Commission's 2026 work programme lists it as pending, and it has no adoption timetable.

48 Directive (EU) 2024/825 (EmpCo): transposition by 27 March 2026; application from 27 September 2026.

characteristic of the product. The certified and conventional volumes are produced through the same physical production system; the claimed reduction arises from allocation rather than a product-specific physical change.

66. Two features of that prohibition must, however, be stated precisely. First, the EmpCo Directive and the UCPD govern business-to-consumer (B2C) commercial practices; steel is overwhelmingly a business-to-business (B2B) product, and on the producers' published materials JISF-certified steel is not presently the subject of consumer-facing 'green' advertising in the Union. Its identified uses in the Union are confined to the industrial sector: casing for a geothermal well in the Netherlands, and a transformer manufactured in Europe.[49]

67. The downstream route is nonetheless the design of the scheme. In Japan certified steel has already reached consumer end products – beverage and confectionery cans, garden sheds, office furniture and mass-production cars, including the new Nissan Leaf, for which JFE has announced the use of JGreeX. The Leaf is also sold in the Union, but Leafs for European markets are built at Nissan's plant in Sunderland, in the United Kingdom, and whether they contain certified steel has not been established.[50] The JISF guideline contemplates that customers will carry the certified reductions into their product carbon footprints and claim carbon neutrality under ISO 14068-1, and all three producers tell customers that the reductions may be reflected in their Scope 3 and product-level figures. EmpCo is engaged when an automaker or other manufacturer advertises a "low-carbon" or "carbon-neutral" vehicle to consumers in the Union on the strength of those credits. So framed, the exposure converts into a competitiveness argument – the regulatory-compliance burden falls on the purchasing manufacturer – and it aligns with the CBAM downstream extension, which reaches the same finished-goods level from 2028. Both instruments concentrate pressure at the level of the

49 Nippon Steel, NSCarbolex news list (Japanese and English, captured 22 August 2026) (adoption for the Dutch geothermal well of 85 Degrees Renewables and ITECO, 28 September 2023); JFE Steel, News Release list 2023 (first adoption for a transformer manufactured in Europe, 26 October 2023); JFE Holdings, JFE Group Environmental Management Strategy 2025, 16. The EU-facing websites and advertising of adopters have not yet been reviewed.

50 Nissan, 'Next generation Nissan LEAF brings EV36Zero vision to life at Sunderland Plant' (press release, December 2025); Automotive News Europe, 'Nissan says Leaf production for Europe is fully running after technical delay' (September 2026).

steel's purchaser.[51]

68. Second, the Article 6 route does not depend on Annex I. The German Federal Court of Justice in Katjes (I ZR 98/23, 27 June 2024) supports that parallel ground directly: it held that emissions reduction and offsetting are not equivalent, reduction taking precedence, and that any qualifying explanation must appear within the advertisement itself – a hyperlink or QR code will not suffice.

69. The combination of the Annex I prohibition, where its conditions are met, and the general misleading-practices rule creates a materially stronger exposure than a mere substantiation requirement. The "green" attribute of JISF - certified steel rests on the allocation of credits – in substance, an offsetting or compensation logic. A claim that such steel is "carbon-neutral" "green" or "low-CO2," made without disclosure that the attribute derives from book-and-claim credit allocation rather than from physical reduction, may fall within the conduct prohibited by the national rules transposing EmpCo and may independently be challenged under the general misleading-practices rule.

70. National courts have already reached the same destination under existing unfair-competition law. The German Federal Court of Justice has held that the term "climate-neutral" is ambiguous and may be used only if its meaning is explained within the advertisement itself; and – critically – that emissions reduction and emissions offsetting are not equivalent means of achieving neutrality, reduction taking precedence.[52] A line of lower-court decisions is to the same effect.

71. That reasoning transposes directly to the JISF Approach. A certificate that allocates in-house reductions to a physically unchanged product is, for advertising-law purposes, indistinguishable from an offset: it represents

51 Nippon Steel, NSCarbolex news list (n 49) 8–11 (cans, garden sheds, office furniture; Nissan, 7 February 2025; Isuzu, 24 April 2025); JFE Steel, News Release lists 2025 and 2026 (Isuzu; supply to Toyota, 11 November 2025; the new Nissan Leaf, 29 January 2026); Kobe Steel, press release, 'Registration of Kobenable Steel in NETIS' (28 May 2024) 2 (Nissan mass-production cars); JISF, GX Steel Guideline (n 8) 13–14, section 7.5; Nippon Steel, NSCarbolex Neutral product page (Japanese and English) 3 ('Feature 3'). The published materials do not show whether certified steel is used in Leaf vehicles placed on the EU market, or whether Nissan's European communications rely on it. Together with Toyota and Isuzu vehicles, this is the main channel to monitor now that EmpCo applies.

52 Bundesgerichtshof, judgment of 27 June 2024, I ZR 98/23 ('klimaneutral'). A line of lower-court decisions (concerning, inter alia, 'climate-neutral' meat, jam and refuse sacks) is to the same effect.

environmental value that is not embodied in the product sold.

72. Enforcement is a matter for national authorities through the transposed UCPD framework, which carries substantial penalty exposure. For widespread cross-border infringements subject to coordinated enforcement, the maximum fine available must be at least 4% of the trader's annual turnover.[53]

73. Where that enforcement will originate matters in practice. Germany is the jurisdiction to watch: it has transposed EmpCo through the Third Act amending the Act against Unfair Competition (UWG), adopted by the Bundestag in December 2025, promulgated in the Federal Law Gazette (BGBl. 2026 I No. 43) and applicable since 27 September 2026, which carries the offsetting-based neutrality claims into the per se list annexed to § 3(3) UWG and leaves general misleading conduct to § 5 UWG. The practical significance is that German enforcement does not wait upon a public regulator: competitors and the Wettbewerbszentrale may proceed directly, and it is by that private route that the leading "climate-neutral" cases, including the Katjes litigation, have reached the Federal Court of Justice. Italy transposed EmpCo by Legislative Decree No. 30/2026, amending the Consumer Code, which also applies from 27 September 2026 and is enforced by the AGCM; in France the DGCCRF enforces the existing rules described below. These are the principal administrative routes. For a Japanese producer or its EU customer the operative question is therefore not whether an authority will take an interest, but whether a competitor or a consumer association will – and in Germany that step requires no administrative decision at all.

74. France supplies the closer parallel to Germany, on a different footing. Independently of EmpCo, Article 12 of Law No. 2021-1104 of 22 August 2021 (Decree No. 2022-539 of 13 April 2022, in force since 1 January 2023) already conditions any "carbon neutral" or equivalent claim on a published emissions accounting, a reduction trajectory, and disclosed offsetting detail, on pain of a fine up to €300,000. The general misleading-practices provisions of the Code de la consommation (Arts. L.121-1 et seq., transposing Directive 2005/29/EC) supply the wider vehicle, and have already reached an "ambition" level

53 UCPD (Directive 2005/29/EC), as amended by the Modernisation Directive (Directive (EU) 2019/2161), requiring a maximum penalty of at least 4% of annual turnover for widespread infringements with a Union dimension subject to coordinated enforcement.

climate claim by a major energy group: Tribunal judiciaire de Paris, 23 October 2025, No. RG 22/02955 (Greenpeace France, Notre Affaire à Tous and Les Amis de la Terre France v TotalEnergies) held *TotalEnergies*' claim of an "ambition to achieve carbon neutrality by 2050," made while hydrocarbon production continued to expand, to be a misleading commercial practice. The claim was general and insufficiently substantiated, not offset-based – the French court, like the German, does not confine the doctrine to offsetting.

75. France's own EmpCo transposition is, unlike Germany's, late. The 27 March 2026 deadline was missed; the Commission issued a formal notice to France and nineteen other Member States on 28 May 2026. Transposition proceeds via the omnibus DDADUE bill (Arts. 20–21), cleared by the Senate in February 2026 but not yet adopted by the National Assembly. As at the date of this Report, France has no measure implementing the new prohibitions, although the application date of 27 September 2026 has passed. That delay does not remove the risk: the DGCCRF's pre-existing enforcement continues regardless (its €40 million SHEIN settlement of July 2025 included a specific penalty for unsubstantiated environmental claims), and TotalEnergies shows French courts already applying EmpCo's substantive standard under existing law.

76. The exposure runs down the supply chain. A purchaser – an automaker or a construction group – that re-presents JISF steel as "low-carbon" in its own EU-facing claims imports the same liability, and the chain of misrepresentation extends to the end user.

77. The Korean precedent is a relevant comparator, stated here only to the extent documented in the materials available to us. According to those materials, following a complaint in 2023 the Korea Fair Trade Commission issued a corrective order in respect of specified advertising by POSCO, and POSCO suspended the advertising in question; a separate civil action concerning blast-furnace relining was filed in February 2025. We have not reviewed POSCO's response to the complaint.[54]

54 SFOC (Solutions for Our Climate) complaint to the Korea Fair Trade Commission and the Ministry of Environment (2023); the KFTC issued a corrective order in respect of specified POSCO advertising found false or exaggerated, reported on 17 April 2025, following which POSCO suspended the advertising in question; a separate civil action concerning blast-furnace relining was filed by youth plaintiffs and SFOC on 27 February 2025. On the wider international criticism of the method, see the civil-society open letter opposing mass-balance greenwashing (SteelWatch and others, 5 June 2025).

78. What the Korean authorities did *not* do was to rule the mass-balance methodology unlawful in itself. The precedent therefore supports the proposition that mass-balance advertising attracts regulatory and litigation risk; it does not support the proposition that Mass Balance is unlawful per se. This Report states that limit explicitly, consistently with the risk-mapping purpose of this Report.

VIII. THE INTERNATIONAL-LAW DIMENSION

79. The international-law dimension does not found a claim against the steelmakers, and we maintain that characterisation throughout. We develop it at length nonetheless, for it carries independent significance: it defines the obligations of the Japanese State; it shapes the regulatory and litigation environment in which the steelmakers operate; and it forms part of the same convergence, identified in Section IV, away from accounting and towards emissions reduction tied to specific production processes and products.

80. The doctrinal exposition of the Advisory Opinion – the applicable law, the Paris obligations, the standard of conduct, fossil-fuel production and subsidy, legal consequences, causation and attribution, the erga omnes character of the obligation, the human-rights dimension, the separate opinions and the companion jurisprudence – is set out in the Annex, to which reference should be made. Retained here is the single holding that connects the State layer to corporate conduct, together with the position of Japan and the application to the present matter.

A. Regulation of private emitters

81. Of direct importance here, the duty of prevention extends to the conduct of private actors. The Court held that a State may incur responsibility where it fails to exercise due diligence by not adopting the regulatory and legislative measures necessary to limit the emissions of private actors within its jurisdiction. The obligation is, in substance, an obligation to regulate.[55]

B. The position of Japan

82. One feature of the proceedings bears directly on this matter: the State whose conduct underlies it was an active participant, and argued for a markedly narrow reading of the law.

55 Obligations of States in respect of Climate Change, Advisory Opinion, ICJ Reports 2025 (23 July 2025), para 428; and, on environmental impact assessment extending to the downstream effects of individual activities, para 92.

83. In its written pleadings Japan contended that the UNFCCC and the Paris Agreement are the *lex specialis* governing greenhouse-gas emissions, that the customary principles of prevention and due diligence were of little help and could not prevail over the treaty regime, and that emissions are not prohibited but merely regulated.

84. It maintained that the principle of common but differentiated responsibilities and respective capabilities is treaty-based rather than customary, and modulated to accord to present capabilities rather than historical contributions; that the consequences in issue should be resolved through the treaties' cooperative, non-adversarial mechanisms rather than the law of State responsibility, the loss-and-damage regime affording no basis for liability or compensation; and that the diffuse and cumulative character of emissions makes the required causal nexus difficult or impossible to establish.[56]

85. The Advisory Opinion rejected the core of that position: it held that customary law applies alongside the treaties, affirmed a stringent due-diligence standard and the duty to regulate private emitters, placed fossil-fuel subsidisation within the field of potentially wrongful conduct, and confirmed the application of the ordinary law of State responsibility. Three points follow.

86. Japan argued for a narrower reading of these obligations in the advisory proceedings, and on the central questions the Court did not accept it. That bears on Japan's own exposure as a State. Japan takes a similar position on the trade-law instruments (Section IX): in both settings it opposes the instruments through which outside pressure on the Standard would operate. That is a further reason to treat international law and trade law as context for this report, and not as the basis of a claim.

87. It is worth pinpointing the tension between Japan's subsidisation of mass-balance "green steel" (Section III) and the Opinion's identification of fossil-fuel subsidisation and state failure to regulate private emitters as conducts that may engage responsibility.

56 Written Statement of the Government of Japan, ICJ, 22 March 2024 (the climate treaties as lex specialis; the customary principles 'of little help'; emissions regulated, not prohibited; CBDR-RC as treaty-based, flexible and capability-based); and Written Comments of Japan, 15 August 2024 (intertemporal law and non-retroactivity; Question (b) to be answered through the treaties' non-adversarial mechanisms; loss and damage as no basis for liability or compensation; the difficulty of establishing causation).

C. Application to the present matter

88. Three propositions follow for the present matter.

89. First, the Standard engages the State's obligations directly. Japan's certification of mass-balance steel as "green," and the channelling of public procurement and subsidy toward it, prolongs high-emission blast-furnace production while representing it as low-carbon. This conduct may qualify as potentially wrongful action – subsidisation, and failure to regulate private emitters – and sits in tension with a stringent due-diligence standard, focused on promoting decarbonisation in carbon-intensive routes of production rather than on enabling artificial accounting techniques.

90. Second, the international-law standard reinforces, at the level of State obligation, the proposition that runs throughout this Report: environmental claims must correspond to physical reality. The Court's insistence on actual emissions and on best available science – and, in the Bhandari–Cleveland declaration, on assessing real combustion rather than nominal attribution – perfectly conforms to this perspective.

91. As a third point, it is worth clarifying that none of these considerations can found a claim against the steelmakers. The Opinion addresses the obligations of States; it binds Japan, not Nippon Steel. Its relevance to the steelmakers is indirect but real: it frames the State's exposure, it strengthens the normative case, and – most concretely – it will drive the domestic and European regulation and litigation through which the standard reaches corporate conduct.

92. A further qualification, developed in Judge Cleveland's declaration, points in the opposite direction: international investment law and investor-State dispute settlement may be invoked by affected producers and their financiers to resist the very measures on which the regulatory analysis depends, even as the Opinion strengthens the legitimacy of climate regulation against such challenge. The international-law layer is, accordingly, a framing rather than a

cause of action.[57]

57 On the implications for corporate actors and their financiers, and for investment-treaty and ISDS reform, see the Declaration of Judge Cleveland (international investment law); L Schaugg, N Jones and J Qi, IISD analysis of the Advisory Opinion (2025); and the Centre for Climate Engagement briefing on corporate climate risk (2025) (the Opinion 'puts fossil fuel producers on notice').

IX. TRADE LAW AND APPLICATION TO THE JAPANESE STANDARD

93. We shall address the trade-law dimension more fully than the international-law dimension for two reasons: because it has been raised in the materials, and because its analysis bears directly on the core of this Report.

94. In net terms, nonetheless, the trade-law dimension is context and does not found a claim. It bears on the matter in one respect: the alignment, on the mass-balance question, between the analysis in this report and the environmental integrity rationale of the European Union measures (and the CBAM in particular). However, it supplies no independent claim; it should be deployed, if at all, to reinforce the regulatory analysis rather than as an independent line.

95. Additionally, as is well known, the Appellate Body has lacked a quorum since December 2020.[58]

Application to the Japanese Standard and conduct

A. The standard and the conduct at issue

96. The heads above state the applicable standards. We take the factual particulars from the Japanese local-counsel report and the JISF materials; the characterisation under European and international law is our own.[59]

97. Firstly, the integrated producers – Nippon Steel, JFE Steel and Kobe Steel – continue to make steel by the blast-furnace–basic-oxygen route, at roughly 2.0 tonnes of CO_2 per tonne on their own published basis (Nippon Steel, 1.96 for FY2024), rather than by the scrap-fed electric-arc route, at which Japan's

58 Nor has a Panel yet ruled on the compatibility of the specific CBAM arrangements with the WTO law system, although the scheme is currently under challenge by Russia. See the WTO law dedicated webpage on DS639: European Union and its Member States – Carbon Border Adjustment Mechanism.

59 For the factual particulars in this Section we draw on Fukunaga (n 1); the legal characterisation is ours.

principal electric-arc producers operate at some 0.3 to 0.4 tonnes, or by hydrogen direct reduction. Secondly, greenhouse gas emissions reductions achieved anywhere in the undertaking are pooled and issued as JISF "reduction certificates," which are then apportioned and allocated, on the books, to highly carbon-intensive blast-furnace steel. JFE's own description is of reductions "allocated to any steel product."[60]

98. Thirdly, the steel is marketed as low-carbon. Nippon Steel presents NSCarbolex Neutral as GX Steel embodying, as environmental value, the reductions achieved in its steelmaking process, and in the business strategy it filed with NEDO as a condition of public funding describes it as a carbon-neutral steel product brand. JFE supplies JGreeX as "green steel of high environmental value;" and Kobe Steel lists Kobenable Premier with a 100% reduction in CO_2 per tonne. All three present the steel as unchanged in quality and function from conventional steel, and all three tell customers that the reductions may be reflected in their Scope 3 and product carbon footprints.[61]

99. Fourthly, the State creates the demand. Under the Basic Policy, as amended in February 2026, steel carrying a JISF-verified reduction volume is "Criterion Value 1" for goods made of steel: the higher standard that each procuring body must pursue, with annual quantitative targets, unless supply constraints prevent it. How a given contracting authority operationalises it – as a specification, an eligibility condition or an award factor – depends on the tender. The criterion does not yet extend to public works, although certified steel has been adopted in bridge works through best-value tendering and registration in MLIT's NETIS database, and in office furniture procured by a municipality. The same Cabinet decision, when it admits mass balance for biomass plastics, requires certification by a third party under the standards of

60 Transition Asia (n 4) 11 (0.28–0.37 tCO_2/t for Japan's five principal electric-arc producers); JFE Holdings, JFE GROUP REPORT 2025, 63 (translation by Japanese counsel).

61 Fukunaga (n 1); the certificate mechanism and the company-wide pooling are described in Section III above. Nippon Steel, NSCarbolex brand site 2 and NSCarbolex Neutral product page 3–4 (Japanese and English, captured 22 August 2026); Nippon Steel, Integrated Report 2025, 45–46 (GX Steel 'unchanged from conventional steel in its function as a steel product'); Nippon Steel, Business Strategy Vision (April 2025, filed with NEDO) 10; JFE Holdings, JFE GROUP REPORT 2025, 63; Kobe Steel, press release, 'Registration of Kobenable Steel in NETIS' (28 May 2024) 1–2. Quotations from Japanese-language sources are in the translation by Japanese counsel. A separate strand of claims, resting on ISO 20915 and the future recyclability of blast-furnace steel, treats the burden of its production as 'offset' (Integrated Report 2025, 156) and would call for separate analysis under EmpCo. The conduct is independently documented in SteelWatch, Nippon Steel Corporate Climate Assessment 2025 (May 2025).

an independent certification body; for steel it requires only compliance with the industry association's own guideline.[62]

100. Fifthly, the State funds the reductions. The Green Innovation Fund supports hydrogen-steelmaking development by the three producers up to ¥439.16 billion; the GX Economy Transition Bonds fund up to a third of the capital cost of electric-arc conversions, with ¥104.5 billion for JFE at Kurashiki and ¥251.4 billion for Nippon Steel at Hirohata, Yawata and Shūnan. The subsidy conditions do not restrict the sale of the resulting reductions as certificates, and the electric-arc programme rewards it, awarding additional points for the social implementation of GX products through the evaluation of "GX value." The recipients' business strategies filed with NEDO present the sale of mass-balance-certified steel as the business model, and Nippon Steel expects its subsidised conversions to yield some 3.7 million tonnes a year of reductions and some 1.6 million tonnes a year of GX Steel reflecting them. No published material shows that reductions from Green Innovation Fund projects have yet been certified; the allocation of reductions from subsidised facilities is, however, the recipients' published plan.[63]

B. CBAM

101. Applied to that conduct, CBAM gives the certificate no purchase. It

62 Basic Policy (n 10) 2–6, 8–9, 30 (Note 12) and 199–230; Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities, arts 6–8 and 10; Ministry of the Environment, List of Revisions to Designated Procurement Items and Evaluation Criteria (February 2026) 1 (non-fossil-electricity steel added as a consideration item); Kobe Steel, press release (n 51) 1–2 (Shin-Asakura Bridge, MLIT Kyushu Regional Development Bureau; NETIS registration KK-240007); JFE Steel, News Release list 2024 (Yokohama City bridge works, 8 November 2024); Nippon Steel, Integrated Report 2025, 45–46 (lockers and storage procured by Tokai City; the clean-energy-vehicle subsidy for vehicles using GX Steel).

63 METI, R&D and Social Implementation Plan for the Green Innovation Fund project "Hydrogen Utilisation in the Steelmaking Process" (revised 10 March 2026) 11, 16–22 and 25–26 (cap of ¥439.16 billion; recipients Nippon Steel, JFE Steel, Kobe Steel and JRCM; FY2021–2030; partial repayment where efforts are insufficient); NEDO, FY2025 WG report materials (16 April 2025) 5–9 and 16; METI, Public Call Guidelines, Programme I (Steel), Ver. 1.2 (April 2025) 5, 8, 11, 13 and 18 (subsidy rate up to one-third; at least 50% reduction per tonne; additional points for GX products; no payment of profits); adopted-projects lists of 20 December 2024 and 30 May 2025; Nippon Steel, Integrated Report 2025, 41; Business Strategy Visions of Nippon Steel (10), JFE Steel (7) and Kobe Steel (7–8) (April 2025, filed with NEDO); JISF, GX Steel Guideline (n 8) 9–10 (no exclusion of subsidised projects; additionality to be assessed project by project). Kobe Steel was not adopted under the programme; it announced consideration of a scrap-melting furnace on 18 May 2026.

prices the emissions actually embedded in the imported steel; a JISF certificate alters the accounting and not the physical emissions, and the JISF method sits outside CBAM's measurement, reporting and verification system altogether. Blast-furnace steel certified "green" under the Standard therefore enters the Union as ordinary high-carbon steel for CBAM purposes.

102. The quantum is not trivial. The Commission's own impact assessment accompanying the downstream proposal (SWD(2025) 988) estimates that the extension would bring approximately EUR 2 billion of imports from Japan within the scope of CBAM – a concrete measure of the exposure of Japanese steel embedded in finished goods. The proposal is not yet law. With Mr Mohammed Chahim MEP as the Parliament's rapporteur, trilogue negotiations followed the Parliament's vote of 15 September 2026, and the final terms may differ from each institution's position.

103. One objection must be met head-on, because it will be a Japanese producer's first response: that the leading European steelmakers do the same thing – ArcelorMittal's XCarb, thyssenkrupp's Bluemint and Tata Steel's Zeremis all issue certificate-based, mass-balance allocations of a structurally identical kind. The factual premise is largely accurate, but it does not rescue the Standard. The propositions advanced here are not that mass balance is unlawful; they are that book-and-claim allocation earns no relief at the CBAM border, cannot enter a buyer's Scope 3 inventory, and cannot ground a consumer-facing low-carbon claim – and each of those applies with equal force to XCarb. That European producers share the exposure is not a defence to it; it is a measure of how far the direction of EU regulation has moved against the method as such.

104. The rebuttal can also be met on its own ground, because the ISO authority on which it relies has itself moved. In early 2026 ISO/TC 308 published ISO 22095-2 and ISO 22095-3 as separate parts of the chain-of-custody series: Part 2 governs mass balance, Part 3 governs book and claim, and each requires differentiation from the other. Book and claim is defined by the transfer of a characteristic through

administrative instruments rather than through physical material flows – which is what the JISF Approach does. On ISO's own taxonomy the JISF mass balance crediting approach therefore falls on the book-and-claim side of the line, whatever its label, and an appeal to "ISO recognition of mass balance" rests on the label rather than on the model; the taxonomy confirms the distinction drawn at head III between site-based mass balance and the JISF crediting approach. The standard sometimes cited in support, ISO 14077, is an unpublished committee draft of the life-cycle-assessment subcommittee, concerned with incorporating chain-of-custody models into life-cycle assessment; it cannot supply the recognition claimed for it.[64]

105. The industry's own guidance concedes the point. The worldsteel chain-of-custody guidelines, from which the JISF method descends, state that the approaches they describe "cannot strictly follow ISO 22095:2020, specifically because the application of chain of custody approaches for GHG emissions was not originally intended" when that standard was developed. Their revision history is more telling. The first edition called the allocation of reductions to any product, without a physical connection, "book and claim;" Version 1.1 removed the reference to book and claim from the definition of mass balance; and Version 1.2 defines mass balance as operating "with or without a physical connection." The allocation practice itself was left unchanged. The guidelines also disclaim any protection from liability, including for greenwashing claims, so that conformity with them cannot found an argument of regulatory compliance.[65]

106. JISF's own guideline is franker still. It applies the ISO 22095:2020 mass-balance and book-and-claim models "in combination," and pools verified reductions "decoupled from the manufacturing process" for

64 ISO, ISO/CD 14077, Life cycle assessment – Requirements and guidelines for application of chain of custody models in life cycle assessment (ISO/TC 207/SC 5; under development); ISO 22095-2:2026 and ISO 22095-3:2026 (ISO/TC 308). ISO 22095-2:2026 is cited in worldsteel's Version 1.2 guidelines, 18; ISO 22095-3 is not.

65 worldsteel, worldsteel guidelines for GHG chain of custody approaches in the steel industry – GHG reduction certificates, Version 1 (November 2024) 4–5; reiterated in worldsteel, Guidelines for GHG accounting when using chain of custody approaches in the steel industry – GHG reduction certificates, Version 1.2 (February 2026, marked "Draft" but recorded in the version history as published on 24 February 2026) 1, 3, 5 and 16 (the Version 1.1 change of 29 January 2026, "removing reference to book and claim"; the "with or without a physical connection" definition; the designation option for products "not connected to the production chain" of the reduction project; and the disclaimer).

allocation to any product. It also concedes that ISO 14067 does not permit reduction volumes to be allocated to a product carbon footprint, and reaches the same result by allocating emissions instead.[66]

107. The point should nonetheless be deployed with care, for it cuts both ways: Part 3 equally shows ISO institutionalising book and claim as a legitimate model in its own right. That is why the distinction between recognition under international standards and treatment under EU law has to be maintained. A further discrepancy in the European comparator also deserves examination. ArcelorMittal represents that XCarb certificates accord with the GHG Protocol Corporate Accounting and Reporting Standard; but the prohibition invoked at head VI is that in the Corporate Value Chain (Scope 3) Standard, which governs what a purchaser may bring within its own inventory boundary. Conformity with the former says nothing about the latter, and the two should not be conflated.

C. WTO consistency of the CBAM

108. Questions surrounding the legal categorisation of the European Union CBAM under WTO law frame the analysis rather than bearing on the exposure. The preliminary question boils down to whether the CBAM would qualify as a regulatory border adjustment under Article III:4 GATT, whether it should be understood as a border tax adjustment imposed consistently with Articles II:2(a) and III:2 GATT, or whether it could fall within the residual category of 'all other duties or charges of any kind' imposed on or in connection with importation, under Article II:1. This question has been the object of extensive discussion in the literature, primarily due to the very different implications in terms of the WTO law compatibility of ETS export rebates for European Union exports.[67]

109. A border tax adjustment is a tax or charge that: (i) is levied on imported

66 JISF, GX Steel Guideline Ver. 4.1 (8 January 2026) 5–6, 12 and 14–15 (translation by Japanese counsel).

67 For a detailed analysis, see GC Leonelli, 'Export Rebates and The EU Carbon Border Adjustment Mechanism: WTO Law and Environmental Objections' (2022) 56 Journal of World Trade 963.

products (i.e. is adjusted at the border); and (ii) is also levied on the like domestic products. Excises and value added taxes provide some examples. The notion of a border tax adjustment reflects the destination principle, according to which products shall be taxed in the country where they are consumed. Border tax adjustments are regulated under Article II:2(a) GATT, which stipulates that nothing in Article II shall prevent a Member from imposing at any time on the importation of a product "a charge equivalent to an internal tax imposed consistently with the provisions of Article III in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part." Article III:2 GATT, first sentence (National Treatment in respect of fiscal measures), provides that imported products shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products. In accordance with Article III:2 GATT, second sentence, and the note *ad* Article III, the taxed products and directly competitive or substitutable products must also be similarly taxed, consistently with the provisions of Article III:1.[68]

110. The CBAM does not meet the requirements of Article II:2(a), and does not qualify as a border tax adjustment. First, it does not qualify as a "charge." Rather, it lays out a regulatory requirement for CBAM declarants to purchase and surrender a number of CBAM certificates. As per the second requirement of Article II:2(a), a border tax adjustment postulates the existence of an "internal tax." Nonetheless, the European Union ETS is a cap-and-trade regime. While the WTO law definition of a "charge" is sufficiently broad as to suggest that the purchase price of ETS allowances may qualify as an "internal tax," the structural differences between the design and application of carbon taxes and emission trading (cap-and-trade) systems militate against this categorisation.[69]

111. Second, under Article II:2(a), the charge that is adjusted at the border must be "equivalent" to the corresponding internal tax. While the CBAM closely approximates the treatment of European Union products

68 For a more detailed analysis, see Leonelli (n 67).
69 Ibid.

and facilities under the ETS, there are some notable differences. The CBAM, for instance, does not include a cap (maximum number of CBAM certificates); nor can CBAM certificates be traded, unlike ETS allowances.

112. Third, the equivalent internal tax must also be imposed "in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part." This provision signals that only product taxes may be adjusted at the border. The note *ad* Article III employs similar terminology, referring to taxes, charges, laws, regulations or requirements which apply to imported products and to the like domestic products; further, the 1970 Report of the Working Party on Border Tax Adjustments militates against the inclusion of producer taxes within the scope of Article II:2(a). Whilst the CBAM applies to imported products, the corresponding domestic "pecuniary burden" associated with compliance with the ETS does not qualify as a product tax. On these grounds, the CBAM does not meet this requirement of Article II:2(a), either.[70]

113. On close scrutiny, the CBAM thus qualifies as a regulatory border adjustment under Article III:4 GATT. It follows that it must comply with the National Treatment obligations in respect of regulatory measures.[71] The scheme, however, de facto breaches Article III:4 by affording less favourable treatment to imported "like" products. In a similar fashion, it also breaches the most-favoured-nation (MFN) obligation under Article I:1 GATT (de facto and de jure) to the extent that it fails to accord an advantage granted to third country products immediately and unconditionally to the "like" products originating in all other contracting parties.

114. A determination of likeness is considered to be"'[...] fundamentally, a

70 Ibid.

71 Leonelli (n 17); and GC Leonelli, 'Carbon Border Measures, Environmental Effectiveness and WTO Law Compatibility: Is There a Way Forward for the Steel and Aluminium Climate Club?' (2022) 21 World Trade Review 619. It is worth noting that the same findings surrounding the CBAM's incompatibility with National Treatment and Most Favoured Nation treatment obligations would have applied even if the scheme had qualified as a border tax adjustment under Article II:2(a). For this reason, the scheme would have still had to be justified under Article XX and the Chapeau.

determination about the nature and extent of a competitive relationship between and among products."[72] The dispute settlement organs have consistently taken four indicators into account. These are: (i) the properties, nature and quality of the products; (ii) their end uses; (iii) consumers' tastes and habits, encompassing consumer perception and behaviour; and (iv) the tariff classification of the products.[73] Regulatory distinctions relating to the characteristics of a class of products[74] and consumer perception or behaviour[75] may be of relevance to a determination of likeness in so far as they have an impact on the competitive relationship between the products under analysis. The recent Panel Reports in EU – Palm Oil confirmed this traditional approach.[76] For the purposes of the present examination, this suggests that imported CBAM goods that do not differ in any respect other than their carbon intensity would be regarded as part of the same "pool" of like products.[77]

115. The CBAM liability is calibrated to the carbon intensity of the imported products. Products originating from countries that have failed to set in place stringent decarbonisation policies (low ambition countries) are likely to be on average more carbon-intensive than domestic European products, and more carbon-intensive than products originating from countries that have taken on ambitious decarbonisation commitments (high ambition countries). This suggests that the CBAM liability for products originating from low ambition countries is likely to be on average higher than the economic burden borne by European facilities/ products under the ETS, and higher than CBAM liability for products

72 Appellate Body Report, European Communities – Measures Affecting Asbestos and Products Containing Asbestos (EC – Asbestos), WT/DS135/AB/R, adopted 5 April 2001, para 99.

73 Ibid.

74 Appellate Body Report, United States – Measures Affecting the Production and Sale of Clove Cigarettes (US – Clove Cigarettes), WT/DS406/AB/R, adopted 24 April 2012, paras 119 ff.

75 Appellate Body Report, EC – Asbestos, paras 117 ff.

76 See for instance Panel Report, European Union and Certain Member States – Certain Measures Concerning Palm Oil and Oil Palm Crop-Based Biofuels (EU and Certain Member States – Palm Oil (Malaysia)), WT/DS600/R, adopted 26 April 2024, paras 7.422 ff and paras 7.985 ff. The Panel laid particular emphasis on the primary end uses of the products under analysis (para 7.446) and de-emphasised consumers' perception. The Panel also found that the EU had failed to substantiate its assertion that consumer preferences against palm oil-based biofuels are of such nature and magnitude that they could rebut a finding of a high degree of competition between different crop-based biofuels (para 7.453). See also European Union – Certain Measures Concerning Palm Oil and Oil Palm Crop-Based Biofuels (EU – Palm Oil (Indonesia)), Panel Report (adopted 24 February 2025) WT/DS593/R.

77 Leonelli (n 17); and Leonelli (n 71).

originating from high ambition countries.[78]

116. This aspect in the design and application of the CBAM results in a disparate impact on "like" imported products and thus less favourable treatment under Article III:4 GATT (de facto violation of National Treatment). It also grants a de facto advantage to products originating from specific WTO Members which is not accorded immediately and unconditionally to the "like" products originating from other Members, in violation of MFN. In the unlikely scenario where a Panel did not find de facto violations, the CBAM would fall foul of MFN de jure due to the "explicit" carbon price "rebate" granted to products originating from countries that have set a carbon pricing system in place. The "rebate" is not granted to "like" products from countries that do not have recourse to carbon pricing.[79]

117. By implication, the CBAM would have to be justified under the subparagraphs of Article XX GATT and the Chapeau thereof. Provisional justification under subparagraphs (b) and (g) would be unproblematic, and does not bear on the present analysis.[80] By contrast, as the following analysis illustrates, the Chapeau represents the main point of exposure and bears directly on the present analysis.

118. The Chapeau of Article XX GATT stipulates that (provisionally justified) measures shall not be applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade. An analysis under the Chapeau targets the application of a measure, i.e. the manner in which a measure is applied in practice. This assessment, however, will also involve an examination of the "design, architecture and revealing structure" of the measure.[81]

119. The Chapeau prevents protectionist or discriminatory abuse of the

78 Ibid.
79 Ibid.
80 Leonelli (n 17).
81 Appellate Body Reports, European Communities – Measures Prohibiting the Importation and Marketing of Seal Products (EC – Seal Products), WT/DS400/AB/R, WT/DS401/AB/R, adopted 18 June 2014, para 5.302.

policy space afforded by the subparagraphs.[82] As acknowledged by the dispute settlement organs, the Chapeau requirements are an expression of the principle of good faith.[83] An assessment under the Chapeau aims to draw a distinction between aspects of a measure that result in justifiable barriers to trade and market access, and aspects of a measure that result in unjustifiable protective (National Treatment-type) or discriminatory (Most Favoured Nation Treatment-type) application.[84] Aspects in the application of a measure that reflect the pursuit of legitimate (e.g. environmental) policy goals qualify as justifiable barriers to trade and market access and will pass the Chapeau test. Aspects in the application of a measure that reveal breaches of good faith, suggest abusive recourse to Article XX, and/or are irreconcilable with the measure's purported policy goal will fail the Chapeau test and qualify as unjustifiable protective or discriminatory application.[85]

120. Compliance with the Chapeau must be evaluated on a case-by-case basis.[86] The dispute settlement organs have interpreted and applied the Chapeau by identifying a number of indicators of compliance, which include: (i) arbitrariness; (ii) even-handed application and calibration; (iii) *sensu stricto* arbitrary or unjustifiable discrimination between countries where the same conditions prevail; (iv) coercion; and (v) situational discrimination.[87] For the present analytical purposes, the exposure arises from an analysis of arbitrariness and of sensu stricto arbitrary or unjustifiable discrimination between countries where the same conditions prevail.

121. By failing to recognise mass balance crediting approaches and by targeting and pricing the emissions that are actually embedded in

82 For an in-depth analysis, see GC Leonelli, 'Anti-Deforestation npr-PPMs and Carbon Border Measures: Thinking About the Chapeau of Article XX GATT in Times of Climate Crisis' (2023) 26 *Journal of International Economic Law* 416.

83 Appellate Body Report, United States – Standards for Reformulated and Conventional Gasoline (US – Gasoline), WT/DS2/AB/R, adopted 20 May 1996, 22; Appellate Body Report, United States – Import Prohibition of Certain Shrimp and Shrimp Products (US – Shrimp), WT/DS58/AB/R, adopted 6 November 1998, paras 158 and 159.

84 Panel Reports, China – Measures Related to the Exportation of Rare Earths, Tungsten, and Molybdenum (China – Rare Earths), WT/DS431/R, WT/DS432/R, WT/DS433/R, adopted 29 August 2014, paras 7.148, 7.190 and 7.351. For a detailed examination, see Leonelli (n 82).

85 See Leonelli (n 33), chapter 2; and Leonelli (n 82).

86 Appellate Body Report, US – Shrimp, paras 158 and 159.

87 Leonelli (n 82), including an in-depth analysis of the indicators and an analysis of the specific CBAM vulnerabilities under the Chapeau of Article XX GATT.

imported products, the CBAM treats "green" JISF-certified steel as ordinary high-carbon steel. This element, however, *reinforces* rather than compromises the justifiability of the CBAM under the Chapeau. Were the European Union instead to credit JISF-style allocation at the border, it would weaken the very feature on which its Article XX defence depends.

122. First, recognition of mass balance crediting and of certificates that are decoupled from the emissions of the specific route of production would be highly arbitrary. The findings of procedural arbitrariness in the EC – Seal Products[88] and the EU – Palm Oil disputes[89] should caution the EU against any such recognition.

123. Second, turning to *sensu stricto* arbitrary or unjustifiable discrimination between countries where the same conditions prevail, granting recognition to the Japanese (and/or other mass balance credits) standards would arbitrarily and unjustifiably discriminate in favour of these countries and products and thus treat countries and products with *different prevailing environmental conditions in the same manner*.

124. In the event of a dispute brought under WTO law, a Panel would normally assess: (i) the existence of different treatment (discrimination); (ii) that discrimination occurs between countries where the same relevant conditions prevail, and/or between equivalent products for relevant analytical purposes; and (iii) that discrimination is arbitrary or unjustifiable in nature, i.e. that it reveals breaches of good faith and thus results in protective application (an unjustifiable advantage conferred to national products) or discriminatory application (unjustifiable discrimination between products originating from different countries).

125. The conditions that are relevantly the same for the purposes of the enquiry are normally identified by reference to the policy goal invoked by the regulating Member (e.g., for the CBAM, environmental and carbon

88 Appellate Body Report, EC – Seal Products, paras 5.324 to 5.328.

89 EU and Certain Member States – Palm Oil (Malaysia), Panel Report para 7.635; EU – Palm Oil (Indonesia), Panel Report (n 76), para 7.659.

leakage risk conditions).[90]

126. Were the European Union institutions to recognise mass balance crediting approaches, they would be treating Japanese blast furnace "green certified" steel products and other imported blast furnace steel products with equivalent embedded emissions *('environmentally equivalent products') in a different manner. From a country-based perspective*, they would also be treating (products from) countries where the same environmental conditions prevail differently on the basis of their choice to adopt different (non-mass balance credits) "green" certification schemes. The discriminatory conduct is clearly arbitrary or unjustifiable in nature; it does not present an environmental rationale, cannot be justified on environmental grounds, and in fact undermines the environmental credentials and rationale of the CBAM.

127. Essentially, any blast furnace steel products with high embedded greenhouse gas emissions are "equivalent products" in environmental terms and for CBAM regulatory purposes; they must therefore be treated in the same manner. Conversely, treating them differently and recognising the value of mass balance crediting erodes the ability of the European Union to justify the CBAM under the Chapeau.

128. It is on these grounds that the trade-law layer connects with the core of this Report.

129. The EU's rejection of book-and-claim is not only adverse to the Standard; it is part of what makes CBAM defensible. On the specific question of mass balance, the analysis in this Report and the EU's trade-law interest are therefore consistent. A practical inference follows for the direction of travel. Pressure on CBAM's WTO consistency is more likely to harden the Union's insistence on measured, physical emissions than to soften it, precisely because that insistence is what the Article XX defence rests upon.

90 Appellate Body Reports, EC – Seal Products, paras 5.299 ff.

D. Disclosure and Scope 3

130. The commercial promise of the Standard is that it assists a customer to decarbonise its supply chain. Applied to an EU customer – an automaker or a builder buying the steel to reduce its own reported emissions – that promise fails at the point of disclosure. The GHG Protocol does not permit a certificate-based, book-and-claim reduction to be counted in the purchaser's Scope 3 inventory; and the SBTi Corporate Net-Zero Standard V2.0 (11 June 2026), although it now recognises book-and-claim as a lever for target implementation where emissions sit in shared, fungible systems such as power grids, maintains a hard line excluding such credits from the inventory and bars the concentration of pooled attributes onto a chosen subset of output. That concentration is precisely the JISF whole-mill operation, which allocates reductions achieved across the undertaking to a fraction of physically unchanged blast-furnace steel: it is not a shared-system chain of custody but an intra-corporate book-and-claim allocation, of the kind distinguished at head III from site-based mass balance.

131. The industry takes the opposite position. worldsteel's guidelines state that customers may use such certificates to reduce their Scope 3 emissions under the GHG Protocol, and point to ISO 14068-1 for claims of carbon neutrality; Nippon Steel tells customers that it "interprets" the allocated footprint as reflected in their Scope 3, while disclaiming responsibility for any reliance on that interpretation. Neither statement alters the Scope 3 Standard, which excludes greenhouse-gas trades from the inventory boundary. The disclaimer shows, moreover, that the producer does not stand behind the interpretation it offers.[91]

132. An EU purchaser that nonetheless reported the reduction would itself misstate its CSRD/ESRS disclosures. The Standard thus does not merely fail to assist the EU customer; it transmits a disclosure risk to that customer, the more acute because the customer is the regulated

91 worldsteel, Version 1.2 (n 65) 14–15; Nippon Steel, NSCarbolex Neutral product page (n 51) 3 (the interpretation stated to rest on information as at 28 October 2025 and to be subject to change); GHG Protocol Scope 3 Standard (n 45).

reporting entity.[92]

133. The consequence is commercial rather than merely regulatory, and it is the point most likely to move a purchaser. An automaker that cannot book the "green" attribute in its Scope 3 gains nothing, in disclosure terms, from paying a premium for JISF-certified steel; if it repeats the attribute in its own consumer-facing advertising it inherits the EmpCo exposure described at head VII; and from 2028 the downstream extension brings the steel embedded in its vehicles within the border charge in any event. Each of those pressures bears on the same procurement decision, and each points the same way – toward steel that is physically lower-carbon rather than certified to be so. Put at its most practical, the Standard's difficulty is that it gives the EU purchaser a reason to buy elsewhere.

E. Anti-greenwashing

134. To market blast-furnace steel as "green" or "carbon neutral" without disclosing its book-and-claim basis is, where the claim reaches consumers, the conduct the EmpCo Directive has prohibited since 27 September 2026, and which is also actionable as a misleading commercial practice under the general rules.[93]

F. The competitive distortion

135. One further feature, drawn from the local-counsel competition analysis, bears on the European assessment. Because a high-emitting blast-furnace producer has more 'room to reduce' than an already-low-

92 See Section VI; and Fukunaga (n 1) (the GHG Protocol, ISO, CDP and SBTi exclude certificate-based reductions from buyer-side Scope 3).

93 See Section VII. KFTC corrective order in respect of specified POSCO advertising, reported 17 April 2025; SFOC complaint (2023); blast-furnace-relining injunction filed 27 February 2025; and the civil-society open letter opposing mass-balance greenwashing (SteelWatch and others, 5 June 2025), which treats the JISF/Nippon Steel approach and the POSCO product line as instances of the same practice. The local-counsel report frames the EU exposure under the Green Claims Directive; as Section VII explains, that proposal has not been formally withdrawn, but remains stalled, and the operative instruments are EmpCo and the UCPD. The substance of the exposure is unchanged.

emission electric-arc producer, the certificate market rewards the higher emitter and disadvantages the genuinely low-carbon producers, such as Tokyo Steel and Yamato Kogyo.

136. The point no longer rests on the local-counsel analysis alone. Market commentary reports a price inversion: a green premium of about 6% for Tokyo Steel's near-zero product, whose electric-arc route emits 82 to 89% less than the blast-furnace producers, against a reported 40% for JGreeX and 100 to 200% for Kobenable Steel. It also records that the GX policy set – procurement, tax credits and the clean-energy-vehicle subsidy – expressly covers mass-balance products while leaving electric-arc steel unmentioned, and that electric-arc producers sought inclusion in METI's Green Steel Study Group consultation. The Renewable Energy Institute identifies a further effect: where the reduction project is itself a conversion to an electric-arc furnace, that furnace's output becomes an "empty shell," to be booked at blast-furnace emissions because its reductions have been sold elsewhere. No complaint to the Japan Fair Trade Commission has been identified; the point rests on market commentary and the consultation record, and is not advanced as a competition-law claim.[94]

137. The significance here is not the Japanese competition-law question, which is for local counsel, but its European corollary: it confirms that the steel entering the Union under a JISF "green" label is, on the physical merits, the high-carbon product – which reinforces each of the conclusions above.[95]

138. Applied to the facts, then, the position is straightforward and adverse. The same consignment of steel is high-carbon for CBAM, ineligible for the EU customer's Scope 3, vulnerable as a marketing claim under EmpCo and the UCPD, and emblematic of conduct the Advisory Opinion treats as potentially wrongful at the level of the State.

94 Transition Asia (n 4) 2 and 11–15, and Appendix 2 at 17; Transition Asia (n 9) 8 and 10; Renewable Energy Institute, Towards the Formation of a Green Steel Market: Issues and Conditions for Using the Mass Balance Approach (July 2024) 4, 13–14 and 22–24. The premium figures are reported, not audited.

95 Fukunaga (n 1) (the 'room for reduction' distortion and the structural disadvantage to scrap-EAF producers; the Antimonopoly Act analysis is a matter for local counsel).

X. SYNTHESIS AND RISK GRADIENT

139. Drawing the threads together, the exposure of the JISF Approach to EU law may be summarised in the following terms.

140. Nearest-term and most pervasive are (a) the EmpCo claims exposure, which has applied since 27 September 2026; and (b) the CBAM border-cost exposure, which applies now and extends to downstream goods from 2028. Both are concrete and quantifiable. The exposures also fall due at different dates, bind different addressees – the producers, their EU customers and the Japanese State – and are enforced through different channels, so that no single change to the Standard, and no single actor, can resolve them.

141. The disclosure-consistency exposure under CSRD/ESRS is medium-term and structural: it imposes no penalty so much as it renders the inconsistency visible and auditable, with reputational and investor consequences for the largest groups.

142. The investor channel can be stated with some precision. Foreign corporations and other non-Japanese holders held 24 to 25% of each producer at 31 March 2026 (Nippon Steel 24.0%; JFE 25.2%; Kobe Steel 25.2%), a category that includes US and Asian holders. Named EU and UK institutions are harder to identify behind custodian nominees. The clearest instance is the BlackRock group's 5.14% of Kobe Steel, of which 1.09% is held through three entities in Germany and Ireland subject to the Sustainable Finance Disclosure Regulation and to the engagement-policy obligations of the second Shareholder Rights Directive. London custody accounts hold 5.1% of Nippon Steel and 1.37% of JFE, and a Brussels custody account 1.06% of JFE; their beneficial owners probably include UK and EU institutions, but cannot be identified from the register. Nippon Steel and Kobe Steel both disclose formal channels

through which institutional investors' views reach the board.[96]

143. The international-law layer, developed in Section VIII, defines the State's obligations; the trade-law analysis in Section IX is context, and is consistent with the analysis of the mass balance crediting question. Neither founds a claim against the steelmakers, but each supports the regulatory-risk analysis on which this Report rests.

96 Nippon Steel, Securities Report (n 43) 62–63; JFE Holdings, Securities Report (n 44) 61–62; Kobe Steel, Securities Report (n 44) 60–62 (the BlackRock holdings as reported on 3 April 2025); Nippon Steel, Integrated Report 2025, 128; KOBELCO Group Integrated Report 2025, 21. Holdings of Nomura International plc appear to be trading positions and are not treated as stewardship holdings.

XI. CONCLUSIONS

144. For the reasons given above, our conclusions are as follows.

a. The JISF Approach is systematically misaligned with the EU regulations. The exposure does not arise from any single instrument. It arises from the structural misalignment of the JISF Approach with the regulatory design of the European Union instruments under analysis, and the EU product-based approach and distinctive focus on emissions attributed to specific production processes in particular. This approach is impossible to reconcile with the apportionment and allocation of credits that are decoupled from the emissions associated with the production of specific physical goods. The exposure is simultaneous under each of the regulatory instruments, and multi-faceted; it is also cumulative and fragmented, falling due at different dates and on different addressees. Taken together, these elements make the trade-mediated risks particularly difficult to manage.

b. Under CBAM, JISF certificates afford no relief at the border; the exposure is operational and, on the Commission's December 2025 proposal, would extend to Japanese exporters of steel-containing downstream goods from 2028.

c. Under CSRD/ESRS, the credits underlying the Standard cannot enter the reported inventory – a position unaffected, and on the carbon-bank point reinforced, by the SBTi Corporate Net-Zero Standard V2.0 – producing an irreducible inconsistency between the 'green' claim and the disclosed emissions of the largest Japanese groups. For Nippon Steel the obligation is likely to be dated, through its Slovak and Swedish subsidiaries; for JFE and Kobe Steel it runs through their EU customers.

d. Under EmpCo, specified consumer-facing offset-based environmental claims have been subject to new prohibitions since 27 September 2026. Whether a JISF-based claim falls within the per se prohibition depends on the terms of Annex I and the applicable national transposition; independently, a claim may be challenged under Article 6 of the UCPD where it misrepresents the product's actual characteristics. In practice, the

exposure arises chiefly through downstream manufacturers.

e. International climate law frames the exposure and the State's obligations, but does not found a claim against the steelmakers; the trade-law layer is context, and an analysis of justification under the Chapeau of Article XX GATT perfectly aligns with the present analysis of the mass-balance question.

145. Subject to the caveats below, the principal exposure lies under CBAM, disclosure and anti-greenwashing law (heads V to VII, applied to the Japanese Standard at head IX); international law and the trade-law analysis (heads VIII and IX(C)) provide the framework within which that exposure arises.

XII. CAVEATS AND LIMITATIONS

146. This report maps legal risk. It is not advice on the merits of any proceeding. It is based on the materials described at head I and on the premises set out in Section III. The Japanese factual particulars at heads III, VI, VII, IX and X draw on the memorandum of Japanese counsel dated 24 August 2026, and are stated as at that date; we have not independently verified the Japanese-language sources.

147. The law is stated as at 30 September 2026. Several of the instruments considered are recent and/or under revision; the CBAM downstream extension and anti-circumvention measures are legislative proposals subject to amendment, and the non-EU ESRS are not yet adopted.

148. This report does not address Japanese or Korean domestic law, and is confined to the European Union-law and international-law matters identified.

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XIII. ANNEX: THE 2025 ADVISORY OPINION IN DETAIL

149. This Annex reproduces the doctrinal exposition of the International Court's Advisory Opinion of 23 July 2025 referred to at head VIII. It is retained in full because it sets out the wider legal context, and not because it founds any claim against the steelmakers.

A. The Advisory Opinion

150. On 23 July 2025 the International Court of Justice delivered, unanimously, its Advisory Opinion on the Obligations of States in respect of Climate Change. It is the most authoritative statement to date of the international law governing greenhouse-gas emissions.[97]

B. Applicable law

151. The Court rejected the contention of certain major emitters that the climate treaties exhaust the applicable law. It held that States' obligations arise concurrently under the UNFCCC and the Paris Agreement, under customary international law, under the law of the sea, and under international human-rights law, and that these bodies are to be read harmoniously.

152. It treated the assessments of the Intergovernmental Panel on Climate Change as the best available science, and the 1.5°C limit as the operative temperature goal against which climate conduct is measured.[98]

97 Obligations of States in respect of Climate Change, Advisory Opinion, ICJ Reports 2025 (23 July 2025). The operative findings were adopted unanimously (President Iwasawa; Vice-President Sebutinde; Judges Tomka, Abraham, Yusuf, Xue, Bhandari, Nolte, Charlesworth, Brant, Gómez Robledo, Cleveland, Aurescu and Tladi).

98 Advisory Opinion (n 55), paras 73–74 (existential threat; IPCC assessments as best available science) and 224 (1.5°C as the agreed primary temperature goal); on the rejection of a treaties-only reading, see paras 161 et seq.

C. The Paris Agreement obligations

153. The Court held that the Paris Agreement creates binding obligations of conduct; that each successive nationally determined contribution must represent a progression and reflect the highest possible ambition; and that the contributions must be capable, collectively, of achieving the temperature goal. The discretion of a State in designing its contribution is therefore bounded, not free.[99]

D. The standard of conduct

154. Beyond treaty, the Court affirmed a customary obligation to prevent significant harm to the climate system, which it treated as a stringent standard of due diligence requiring a State to deploy all the means at its disposal: a State's capabilities are relevant, but even a less well-placed State must do its utmost, and the obligation is one of conduct, not of result.

155. The standard is not abstract – it is tied to the best available science and to the 1.5°C limit, measured against the finite carbon budget, so that the largest emitters bear the most exacting obligations and contributions collectively incapable of meeting the goal fall short.[100]

E. Fossil-fuel production, licensing and subsidy

156. The Court's most consequential passage concerns the emissions themselves. It held that the failure of a State to take appropriate action to protect the climate system – including through fossil-fuel production, fossil-fuel consumption, the granting of exploration licences, and the provision of fossil-fuel subsidies – may constitute an internationally wrongful act attributable to that State.

99 Advisory Opinion (n 55), paras 241 (progression and highest possible ambition) and 245 (capacity to achieve the collective goal); and para 184 (legal weight of decisions of the Conference of the Parties).

100 Advisory Opinion (n 55), para 90 (stringent due diligence; all means at a State's disposal); para 91 (precautionary approach); paras 74, 224, 241 and 245 (best available science; the 1.5°C goal; progression and highest possible ambition); and, on historical responsibility and differentiated capabilities, paras 148 and 151.

157. The Court thereby placed the production, consumption, licensing and subsidisation of fossil fuels within the field of potentially wrongful State conduct.[101]

F. Legal consequences

158. The Court confirmed that the ordinary law of State responsibility applies. A State in breach is under obligations of cessation and of guarantees of non-repetition – which, the Court indicated, may in some circumstances require the revocation of policies or licences that promote fossil-fuel activity – and of full reparation by restitution, compensation or satisfaction; and it remains under a continuing duty to comply, including by submitting progressively more ambitious contributions.[102]

G. Causation and attribution

159. The Court confronted the questions of attribution and causation that climate claims have always raised, and declined to treat them as insuperable. On attribution, a State's failure to discharge a relevant obligation is itself an attributable wrongful act.

160. On causation, the Court reaffirmed the established requirement of a sufficiently direct and certain causal nexus between the wrongful conduct and the injury, which in the climate context resolves into two enquiries: whether the scientific evidence establishes that the harm was caused by anthropogenic emissions, and whether the relevant conduct is attributable to a given State.

161. Crucially, the multiplicity of contributing States does not defeat responsibility: the Court held that the ordinary rules are capable of

101 Advisory Opinion (n 55), para 427. The enumeration reads more as the articulation of a primary rule than as a restatement of the law of attribution; see also the Joint Declaration of Judges Bhandari and Cleveland, below.

102 Advisory Opinion (n 55) (cessation; guarantees of non-repetition, including, in some circumstances, the revocation of fossil-fuel-promoting policies or licences; reparation by restitution, compensation or satisfaction; and a continuing duty to comply).

addressing a plurality of responsible States, and that the cumulative and diffuse character of emissions does not displace them. The obligations of cessation and of non-repetition, moreover, arise from the breach irrespective of proof of damage; only reparation requires the causal link to be established.[103]

H. Erga omnes character

162. The Court held that the obligation to protect the climate system from anthropogenic emissions is owed *erga omnes* (and, under the treaties, *erga omnes partes*), the climate system being a global common good, with the consequence that all States have a legal interest in compliance and standing to invoke responsibility.[104]

I. Human rights

163. The Court recognised the human right to a clean, healthy and sustainable environment as essential to the enjoyment of other rights, and used that recognition to specify the content of States' climate obligations. It found that the adverse effects of climate change may significantly impair the rights to life, to health, to an adequate standard of living, and to private and family life, among others.

164. It confirmed, further, that human-rights obligations may apply extraterritorially where a State exercises jurisdiction, and that the human-rights, climate and environmental regimes inform one another.[105]

103 Advisory Opinion (n 55), on the requirement of a 'sufficiently direct and certain causal nexus' and the two-element enquiry (scientific causation and attribution of conduct), and on the capacity of the rules of State responsibility to address a plurality of contributing States notwithstanding the cumulative character of emissions; cessation and non-repetition arise irrespective of damage, whereas reparation requires causation. Vice-President Sebutinde considered these questions better left to contentious proceedings (see below).

104 Advisory Opinion (n 55), para 440; see also the Declaration of Judge Tladi, para 34 (environment as a global common good).

105 Advisory Opinion (n 55), paras 387–393 (right to a clean, healthy and sustainable environment) and 457 (specification of obligations); on extraterritoriality and mutual reinforcement, paras 394 et seq and 404; see also the Separate Opinion of Judge Charlesworth, para 9 (content of the right).

J. The separate and dissenting opinions

165. The operative findings were unanimous, but several judges appended declarations and separate opinions, and their tenor is significant: the criticism runs, almost uniformly, in the direction that the Court did not go far enough.

166. In a joint declaration, Judges Bhandari and Cleveland would have had the Court hold more forcefully that the law requires the phasing-out of fossil fuels through production, licensing and subsidy, emphasising that fossil fuels are produced in order to be burned and that environmental impact assessment must reckon with their eventual combustion.[106]

167. Judge Tladi would have affirmed the right to a healthy environment directly; Judge Aurescu would have characterised it as customary and extended restitution to the continued statehood and maritime entitlements of States affected by sea-level rise; Vice-President Sebutinde, with Judges Xue and Yusuf, pressed the under-development of common but differentiated responsibilities and the position of developing States by reference to historical and cumulative emissions; Judge Charlesworth wrote on the content of the right; and Judge Bhandari would have specified more concrete consequences, including reparation directed at greenhouse-gas sinks and lost territory.[107]

168. These opinions do not weaken the Opinion; for present purposes they reinforce its trajectory, since the disagreement concerns the Court's caution, not its direction.

K. The companion jurisprudence

169. The Opinion is the third, and most comprehensive, of a sequence. It follows the Advisory Opinion of the International Tribunal for the Law

106 Joint Declaration of Judges Bhandari and Cleveland (a more forceful treatment of fossil fuels; the assessment of combustion in production, licensing and subsidy decisions).

107 Declaration of Judge Tladi; Separate Opinions of Judges Aurescu, Charlesworth and Bhandari; and Declarations of Judges Xue and Yusuf and Vice-President Sebutinde (common but differentiated responsibilities; historical responsibility; the position of developing States; the content of the right; and more concrete legal consequences).

of the Sea of 21 May 2024, which held anthropogenic greenhouse-gas emissions to be marine pollution within the law of the sea and imposed stringent obligations to prevent, reduce and control it; and the Advisory Opinion of the Inter-American Court of Human Rights of 2025, which affirmed an autonomous right to a healthy climate and a duty to regulate corporate conduct.

170. The European Court of Human Rights, in *KlimaSeniorinnen*, had already held that the Convention imposes positive obligations to adopt and effectively to apply mitigation measures. The International Court endorsed the Tribunal's findings, and the four instruments converge.[108]

108 ITLOS, Advisory Opinion of 21 May 2024 (anthropogenic GHG emissions as marine pollution within UNCLOS Part XII; stringent due diligence under Article 194); Inter-American Court of Human Rights, Advisory Opinion OC-32/25 (2025); ECtHR, Verein KlimaSeniorinnen Schweiz and Others v Switzerland (9 April 2024).