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Background

In November 2019, version 1.0 of the ResponsibleSteel Standard was approved and ratified by our membership and Board. The Standard contains 12 Principles with more than 200 requirements that set the benchmark for responsible steel production. Sites can choose to be independently audited against the requirements of the Standard to demonstrate that they meet high levels of performance when it comes to environmental, social and governance (ESG) issues. Steel sites that become certified against the approved Standard are able to claim that their site is operated in a responsible manner. This is what we call ‘Site Certification’. The 12 Principles for ‘Site Certification’ are shown on the following figure.

The approved Standard contains requirements for input materials (then called raw materials) in Criteria 1.1 and 2.2, and for greenhouse gas (GHG) emissions in Principle 8. The input materials requirements ask for a high-level commitment to responsible sourcing and for evidence that this commitment is being implemented. However, the requirements do not provide incentives for steel companies and their suppliers to work towards high levels of ESG performance in their supply chains. The GHG Principle is ambitious in that it requires company and site level strategies, plans and targets aligned with the goals of the Paris Agreement. It also requires that steel companies and sites report on their GHG emissions performance, but does not set a threshold for the current level of GHG emissions performance at a site.

The ResponsibleSteel membership and Board determined that further requirements for the responsible sourcing of input materials and for GHG emissions would be developed as these two areas are considered to pose the greatest challenges to the steel sector when it comes to their ESG impacts. Meeting these requirements in addition to the already approved Standard would allow steel sites to not only make claims about the way their site is operated, but also about their sourcing of input materials and their GHG emissions performance. Steel sites participating in ResponsibleSteel will be audited against the additional requirements on a voluntary basis. Incentives to meet the additional requirements are expected to come from the market in the form of customer, public policy and green finance specifications, from civil society and peer pressure, or from the wish to distinguish from competition. Certification against the additional responsible sourcing and GHG emissions requirements is called ‘Steel Certification’. We are proposing three levels of performance for responsible sourcing and for crude steel GHG emissions intensity. To achieve ‘Steel Certification’, steel sites will be required to meet at least the lowest level of both responsible sourcing and GHG emissions.

One of the benefits of achieving ‘Site Certification’ or ‘Steel Certification’ is that the respective sites can promote their achievements and thus distinguish from competition through the use of specific messages, so-called claims. Claims should be short and memorable, but they also have to be truthful and cannot overpromise. ResponsibleSteel-related claims need to make clear that there are different levels of performance.
that can be achieved. This has to be understood when looking at ‘site’ claims and ‘steel’ claims in isolation. The examples provided below are supposed to help members and stakeholders understand our general approach to claims. None of these claims have been agreed and we intend to consult on them over the next months to seek consensus with members and stakeholders on what certified sites can claim for which achievements.

<table>
<thead>
<tr>
<th>Certification</th>
<th>Responsible sourcing claim (to be discussed)</th>
<th>Level</th>
<th>GHG claim (to be discussed)</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Against the 12 Principles of the approved Standard</td>
<td>Our site xyz has achieved ResponsibleSteel ‘Site Certification’. This means that our site is operated in a responsible manner with regards to environmental, social and governance issues, in line with the ResponsibleSteel Standard. See responsiblesteel.org/certification for more information.</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>In addition, lowest level for both responsible sourcing and GHG must be achieved</td>
<td>As above, plus: In addition, our site has achieved Level 1 of 3 of ResponsibleSteel ‘Steel Certification’. This means that we are engaging with our input material supply chains to improve ESG performance and that our CO2 emissions are lower than the global average. See responsiblesteel.org/certification for more information.</td>
<td>Level 1</td>
<td>Level 1</td>
<td>Level 1</td>
</tr>
<tr>
<td>Where higher levels for responsible sourcing or GHG are achieved, this is reflected in the claims</td>
<td>We have achieved Level 2 of 3 for responsible sourcing of input materials. This means that... (to be discussed)</td>
<td>Level 2</td>
<td>Level 2</td>
<td>Level 2</td>
</tr>
<tr>
<td></td>
<td>We have achieved Level 3 of 3 for responsible sourcing of input materials. This means that... (to be discussed)</td>
<td>Level 3</td>
<td>Level 3</td>
<td>Level 3</td>
</tr>
<tr>
<td></td>
<td>Level 4. Currently not awarded since aspirational: IRMA 100 or an equivalent standard achieved throughout mined material supply chains. For scrap, responsible recycling certification, which does not (yet) exist</td>
<td>Aspirational</td>
<td>Aspirational</td>
<td>Aspirational</td>
</tr>
<tr>
<td></td>
<td>We have achieved Level 2 of 3 for GHG emissions intensity. This means that our steel has low embodied carbon</td>
<td>Level 2</td>
<td>Level 2</td>
<td>Level 2</td>
</tr>
<tr>
<td></td>
<td>We have achieved Level 3 of 3 for GHG emissions intensity. This means that our steel has very low embodied carbon</td>
<td>Level 3</td>
<td>Level 3</td>
<td>Level 3</td>
</tr>
<tr>
<td></td>
<td>Level 4. Currently not awarded since aspirational: Net zero steel</td>
<td>Aspirational</td>
<td>Aspirational</td>
<td>Aspirational</td>
</tr>
</tbody>
</table>
To summarise, there are two types of certification in the ResponsibleSteel programme:

**ResponsibleSteel Site Certification**

The site meets all 12 Principles and more than 200 requirements of the existing ResponsibleSteel Standard

**ResponsibleSteel Steel Certification**

As above, plus the site meets at least the lowest of three performance levels for responsible sourcing and for crude steel GHG emissions intensity

The ResponsibleSteel certification programme is being developed to cover the entire steel supply chain from mine site and commercial scrap collection down to the steel end user (e.g. the car, construction or white goods manufacturing company). The current ResponsibleSteel Standard can be applied directly at sites where input materials are processed, and at steel making and steel finishing sites. Upstream supply chain activities, such as mining, scrap collection and processing will be covered through recognition of other input material programmes that promote and define responsible practices. We have made first steps in this regard by assessing a number of mining programmes to identify if they can be recognised and integrated into our responsible sourcing requirements. More information on this work can be found below.

Towards the end of 2021, ResponsibleSteel will start developing options to include downstream supply chains in the ResponsibleSteel certification programme.

**About this document**

This document presents revised draft versions of the additional requirements for the greenhouse gas (GHG) emissions. The draft requirements are published for stakeholder consultation on 19 April 2021 for 60 days. The draft requirements for the responsible sourcing of input materials are published at the same time and can be found on the ResponsibleSteel website. This is the second time we are consulting on these requirements. The first consultation took place from September to November 2020. Should stakeholders want to see the feedback we received on the first draft and how it was taken into account, they may visit our website from 26 April where we will post the full feedback and our responses.

In addition to the revised draft requirements, we are seeking feedback from stakeholders on the consultation questions posed in the document and on the provided guidance. The guidance explains key terms and concepts related to the requirements and is intended to clarify the implications and intent of the proposed requirements.

The Annexes to this document further elaborate some of the proposed requirements and describe options that were discussed with ResponsibleSteel members and stakeholders but not considered for the draft requirements.
This document has been prepared by the ResponsibleSteel Secretariat based on discussions with our Board, members and stakeholders over the last months and years. Approval of the requirements will be sought from the ResponsibleSteel Board and membership once the requirements have been finalised.

We are keen to hear from stakeholders whether they support our draft requirements and the accompanying guidance and what their opinions are on the consultation questions and the Annexes. Stakeholders are asked to submit their feedback to ResponsibleSteel by 19 June 2021 via the Google forms on:

https://forms.gle/nqbgU8qUo1wRNv5e6 for responsible sourcing and https://forms.gle/WmAsPwGfKaik8htF9 for GHG emissions.

Following the public consultation, we will collate and review the received feedback. We are planning to hold discussions with Members and stakeholders on the received feedback from June and to finalise the requirements in September to be able to put them to our Members and our Board for approval and ratification in October 2021.

The following graph summarises our anticipated timeline for finalising the responsible sourcing and GHG emissions requirements.

If you have any questions, please contact

For responsible sourcing:

Marnie Bammert
Technical and Assurance Director
mbammert@responsiblesteel.org

For GHG emissions:

Matthew Wenban-Smith
Policy and Standards Director
mwenbansmith@responsiblesteel.org
Introduction to this revised draft

Climate Change and Greenhouse Gas Emissions – requirements for site certification and additional requirements for ‘steel certification’

Drafting Notes:

Principle 8 of the ResponsibleSteel Standard version 1-0 requires steelmakers to demonstrate their commitment to the goals of the Paris Agreement through strategic planning, goal setting, and the measurement and reporting of progress in reducing greenhouse gas emissions, as summarised in Figure 1.

These five criteria are essentially forward-looking, focussed on long- and medium-term planning, performance and reporting, and are of fundamental importance if steelmakers are to make the transition to net zero steel production.

However, the five criteria of the current Standard do not specify minimum GHG emissions performance thresholds. This is intentional. ResponsibleSteel site certification is intended to give recognition to companies and sites that are publicly committed to making the transition to a net zero carbon future. Such recognition is essential to encourage the capital investments in new, low GHG emission technologies that are urgently needed in the steel sector if the goals of the Paris Agreement are to be achieved. There will be a delay of many years between corporate commitment, investment, and the realisation of GHG emissions reductions. Excluding companies and sites from the ResponsibleSteel programme based on their current GHG emissions performance would make it harder, not easier, for many companies to make the necessary transition, as well as removing incentives for sites to meet the other 11 ResponsibleSteel Principles.

However, providing incentives for companies and sites that are committed to making the transition to low GHG emissions is not the only mechanism that ResponsibleSteel can offer to support the achievement of the goals of the Paris Agreement. A second, complementary mechanism is to provide a means for downstream
companies purchasing or specifying steel, as well as policy makers defining public procurement requirements or other policy tools, to differentiate between steel products on the basis of current GHG emissions performance, rewarding leadership by those companies and sites that have already started on the transition.

Designing the GHG emissions thresholds for the certification of steel is critically important. If the thresholds are set too high, they will create a barrier to participation. Set too low, and they will lack credibility and fail to reward leadership. They need to incentivise better performance both for steelmaking using scrap, and for steelmaking from iron ore. And they need to meet the needs of downstream users who have their own commitments to reduce their GHG emissions, increasingly focussed on achieving net-zero embodied emissions for their steel supplies by 2050 or earlier.

The additional ResponsibleSteel requirements for steel certification are designed to address these challenges. Figure 2 summarises the four additional Criteria related to GHG emissions that were put forward in the first draft, ‘ResponsibleSteel Proposals and Consultation Questions on GHG Emission Requirements for the Certification of Steel Products’.

![Figure 2](image_url)

**Figure 2.** Summary of the proposed additional criteria in relation to GHG emissions for the ResponsibleSteel certification of steel products.

**Proposed changes to the organisation of criteria and requirements of Principle 8**

In this revised draft the existing criteria of Principle 8 of the current ResponsibleSteel Standard (v1-0) have been combined with the revised draft of the new criteria for steel certification, as shown in Figures 3a and 3b. We propose that this combination of requirements into an integrated, revised Principle 8 is the clearest way to present the requirements for the ResponsibleSteel certification of sites, together with the additional requirements that the site would need to meet in order to market and sell its steel (and potentially other products, co-products or by-products) as ResponsibleSteel certified products.
In this revised structure:

- The requirements from the existing ResponsibleSteel Standard criterion 8.5, for ‘Site-level GHG emissions reporting and disclosure’ have been merged with the draft requirements of criterion 8.9 for ‘Transparency and comparability of GHG emissions data’ into a single new criterion 8.7 titled, ‘GHG emissions disclosure and reporting’.

- The previous draft criterion 8.7, ‘Consistent GHG accounting rules to determine crude steel GHG emissions intensity performance’ is renumbered and its title revised as the new criterion 8.4, ‘Determination of GHG emissions for the purpose of site level GHG emissions intensity performance comparisons’.

- The requirements of the previous draft criterion 8.8, ‘Steel Product GHG emissions (worldsteel LCA methodology)’ have been combined with the requirements of previous draft criterion 8.6, ‘Crude steel GHG emissions intensity performance threshold (taking account of end of life scrap percentage)’. 
steel GHG emissions intensity performance threshold (taking account of end-of-life scrap percentage)’ into a single new draft criterion 8.6 titled, ‘ResponsibleSteel product certification’.

Notwithstanding these revisions of the structure of Principle 8, the fundamental approach remains the same as in the previous draft. In particular:

- The proposed approach to ResponsibleSteel certification of steel focusses on two distinct aspects of a site’s GHG emissions performance:
  - The GHG emissions intensity of the site’s production of crude steel, taking account of the percentage of scrap metal used as an input material;
  - The allocation of absolute GHG emissions to the site’s products (including steel products, intermediate products, co-products and/or by-products) – the carbon footprint of a product.

The intent is that by focussing on these two indicators the standard will provide the greatest possible traction for downstream users to incentivise and reward low GHG emission steelmaking, from ‘cradle to steel product’. In consultation on the previous draft 80% of stakeholders who expressed a preference supported this dual approach.

- The determination of GHG emissions includes consideration of GHG emissions from ‘cradle’ (including emissions associated with the extraction, processing and transportation of input materials), to the point at which crude steel is first produced (in the case of the determination of the GHG emissions intensity for the site’s production of crude steel), or to the site’s gate (in the case of the determination of the carbon footprint of a product, co-product or by-product supplied by the site).

Proposed changes to the existing criteria and requirements of Principle 8

A number of changes have been proposed to the existing criteria and requirements of Principle 8. These changes are highlighted in the text, with additions highlighted in yellow, and deletions shown with ‘strikethrough’. Changes have been proposed:

- To ensure there is full alignment between the requirements for ResponsibleSteel ‘site certification’, and the additional requirements for the ResponsibleSteel certification of products;
- In a few places, as highlighted and noted in the ‘drafting notes’ for each criterion, to make corrections, or changes to the ‘guidance’, with the intent to improve the clarity or provide additional guidance for implementation.

In making these changes the intent has been to be conservative – we have not sought comments on the previously approved standard, and we should emphasise that it remains the intent that the whole standard will be subject to review and revision by November 2022, three years after its original publication in November 2019.

In one area, substantive changes to the current Principle 8 have been proposed. This is in relation to the proposed requirements for the public disclosure of site level GHG emissions data, as specified in the existing ResponsibleSteel Standard criterion 8.5, requirement 8.5.1. These proposed changes were triggered by the decision to merge the GHG reporting/disclosure requirements as specified in the current criterion 8.5 for site certification, with the proposed new GHG reporting/disclosure requirements for the ResponsibleSteel certification (criterion 8.9 in the previous draft requirements for the certification of steel). However, the requirements of 8.5.1 for site level disclosure of GHG emissions data were also identified as problematic for the first sites to undergo assessment for ResponsibleSteel certification in 2020. The proposed changes to the
requirements in this revised draft (now criterion 8.7) have not been drafted in order to resolve the concerns that were raised during these first site assessments, but we feel it is important to be transparent that concerns were raised by the steelmaker concerned, and to be clear to all stakeholders that these concerns will be presented and discussed with the full ResponsibleSteel membership during the consultation on the new draft requirements.

Proposed changes to the previous draft requirements for ResponsibleSteel certification of steel products

Finally, numerous changes have been proposed in relation to the detailed wording of the draft criteria and requirements put forward in the previous consultation draft on ‘GHG Emissions Requirements for the Certification of Steel Products’.

This document does not track these changes. However, a ‘tracked changes’ version is available on the ‘resources’ section of the ResponsibleSteel website at https://www.responsiblesteel.org/resources/ for interested stakeholders to download. All of the comments on the previous draft will also be published in an anonymised form on the ResponsibleSteel website, together with an explanation for how the comments have been taken into account in the revised draft.

The main changes for each of the revised criteria are identified in the ‘drafting notes’ at the start of each criterion in this draft. Following the numbering of this revised draft, they are:

- **Criterion 8.4 Determination of GHG emissions for the purpose of site level GHG emissions intensity performance comparison**
  - Greater clarity on scope boundaries, and on the application of GHG accounting rules for the determination of the site’s ResponsibleSteel crude steel GHG emissions intensity performance, and for the determination of a product’s embodied carbon declaration, respectively
  - Proposed introduction of ResponsibleSteel default emissions factors for upstream indirect (Scope 3a) GHG emissions of input materials, when source- or producer-specific information is not available
  - A default emissions factor of zero for all scrap, rather than only for end-of-life scrap
  - Recognition of the potential value of CO2 sequestration associated with biological sources of charcoal

- **Criterion 8.6 ResponsibleSteel product certification**
  - The specification of revised ResponsibleSteel crude steel GHG emissions intensity performance threshold and three levels of performance, based on research carried out with the consultancy organisation CRU (see Annex 4 for further detail)
  - A more flexible approach to the determination of a product’s embodied carbon, recognising a wider range of international standards and tools

- **Criterion 8.7 GHG emissions disclosure and reporting**
  - The criterion now covers GHG emissions disclosure and reporting for sites that are ‘ResponsibleSteel certified sites’ only, as well as for those that meet the additional requirements to sell ResponsibleSteel certified products
  - Sites would no longer be required to report their upstream indirect (Scope 3a) GHG emissions, energy indirect (Scope 2) GHG emissions and direct (Scope 1) emissions separately - only total GHG emissions would need to be reported for site certification. Requirements 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e of the current standard would be deleted. Requirement 8.5.1.d. is incorporated into the new requirement 8.7.1.b, but the reference to offsets has...
been deleted so as to align with the proposed change to the site level planning criterion (criterion 8.5 in this document)

- Sites producing crude steel would also no longer be required to report their total GHG emissions intensity for crude steel production as specified in 8.5.1.g, in order to achieve site certification only.

- The site’s ResponsibleSteel crude steel GHG emissions intensity performance, scrap use and performance level would however need to be disclosed by sites selling ResponsibleSteel certified products, and this information would then also be published by ResponsibleSteel on its website

- The embodied carbon for a product that is marketed or sold as ResponsibleSteel certified would need to be publicly available on request.
DRAFT Principle

Principle 8. Climate Change and Greenhouse Gas Emissions

Drafting Notes

This section includes proposed changes to the wording of the current ResponsibleSteel Standard (v1-0). Additions are highlighted in yellow, and deletions are shown with strikethrough. The proposed changes are:

- Additional wording to the objective, to reflect the additional criteria required for the ResponsibleSteel certification of products
- Additional wording to the background, to emphasise the three key aspects of the ResponsibleSteel approach based on support for:
  - Companies and sites that are committed to decarbonisation
  - Sites that have shown leadership in reducing the emissions intensity for the production of steel
  - Products that are accompanied by declarations of embodied carbon, allowing customers to track their own progress in reducing their own carbon footprints.
- Deleting the wording in relation to the full life cycle approach. This does not reflect any change of policy. The declarations of embodied carbon for ResponsibleSteel certified products may in fact include information related to downstream emissions, recyclability, etc.

Objective:

The corporate owners of ResponsibleSteel certified sites are committed to the global goals of the Paris Agreement, and both certified sites and their corporate owners are taking the actions needed to demonstrate this commitment.

The objective of the additional criteria required for the ResponsibleSteel certification of products produced at the site is to provide the basis for downstream users and specifiers of steel, policy makers and other stakeholders to support steelmakers in their efforts to reduce GHG emissions in the steel supply chain through the use of product specifications, purchasing commitments, financing and investment decisions, policies or other actions based on the recognition of ResponsibleSteel certified products.

Background:

The United Nations refers to climate change caused by man-made emissions of greenhouse gases as the defining issue of our time, and its Sustainable Development Goal 13 urges countries to take urgent action to combat climate change and its impacts.

Tackling climate change requires an unprecedented effort from all sectors of society. The steel industry, responsible for between 7% and 9% of direct greenhouse gas emissions from the global use of fossil fuel\(^1\), has a critical role and responsibility both in relation to the reduction of emissions associated with steelmaking, and in

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\(^1\) Steel’s contribution to a low carbon future and climate resilient societies - worldsteel position paper © World Steel Association 2019 ISBN 978-2-930069-83-8
the supply of the materials that will be needed to achieve the transition to a zero carbon economy.

The ResponsibleSteel standard’s requirements are written to support the Paris Agreement of the parties to the United Nations Framework Convention on Climate Change, which recognises the need for an effective and progressive response to the urgent threat of climate change on the basis of the best available scientific knowledge, and aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by:

a. Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognising that this would significantly reduce the risks and impacts of climate change

b. Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and

c. Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

The standard requires that companies that wish to benefit from ResponsibleSteel certification of their sites must be able to demonstrate, at the corporate owner level, that they are committed to the goals of the Paris Agreement. The standard recognises that the public policy environment is critically important to steelmakers’ ability to implement change, and requires that companies identify and then engage to achieve the necessary policy changes. In line with the agreement’s reference to financial flows and climate-resilient development, the standard requires that such companies implement the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

At the site level, the standard requires that greenhouse gas emissions are measured, reported and disclosed, and that site-level targets for greenhouse gas emissions have been developed and are in line with corporate owner level goals.

For the ResponsibleSteel certification of steel the standard requires, in addition, that the GHG emissions intensity for production of the crude steel has been determined and is publicly reported in accordance with internationally consistent GHG accounting rules. It thereby provides for the first time a basis for the GHG emissions for the production of steel from different sites around the world to be compared fairly, consistently and on a like-for-like basis, irrespective of site configuration, steelmaking technology, or choices of input materials.

Finally, the standard requires that any ResponsibleSteel certified product (or co-product or by-product of steel making) must be accompanied with a declaration of its embodied carbon. This allows for downstream users to track the embodied carbon associated with their use of steel products.

Taken together these three key aspects of the standard provide an effective basis to drive and reward GHG emissions reduction across the whole sector:

- The recognition of forward-looking company and site level commitments supports steelmakers in making the transition to new, low carbon emission technologies, recognising that there will be a delay of many years between corporate commitment, investment, and the production of low embodied carbon, and in the long term zero net carbon, steel;

- The determination and public disclosure of the GHG emissions intensity for steel production, distinguishing between distinct, objectively determined performance levels, allows customers and other stakeholders to identify and reward steelmakers that have made the necessary investments to reduce their GHG emissions. The ResponsibleSteel crude steel GHG emissions intensity performance measure provides a fair basis for comparison between sites, irrespective of the technology they use,
and undistorted by differences in a site’s use of scrap as an input material;

- The requirement to provide product specific information on the embodied carbon in a given product allows customers to track their own use of embodied carbon in the materials they use, as well as providing the essential information for them to perform effective life-cycle analyses of their own products and services, whether those are consumer goods, buildings, cars, infrastructure or energy projects.

This ResponsibleSteel standard does not attempt to apply a full life cycle approach. It does not, for example, consider the implications of the use of alloys or coatings that would limit or extend the lifetime of a steel product, or design aspects that would make it harder or easier to re-use or recycle steel products. Nor does the standard consider downstream ‘in use’ greenhouse gas emissions. ResponsibleSteel acknowledges the importance of these aspects, but considers that they should be addressed through complementary standards and tools. ResponsibleSteel is committed to supporting the development and use of complementary standards and tools in the future, in line with its mission to enhance the responsible sourcing, production, use and recycling of steel.

Criterion 8.1: Corporate commitment to achieve the goals of the Paris Agreement

<table>
<thead>
<tr>
<th>Drafting Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>This section includes proposed changes to the wording of the current ResponsibleSteel Standard (v1.0). Criterion 8.1 Corporate commitment to achieve the goals of the Paris Agreement</td>
</tr>
<tr>
<td>Additions are highlighted in yellow, and deletions are shown with strikethrough.</td>
</tr>
<tr>
<td>• An additional guidance note to requirement 8.1.2 is proposed, referencing companies that have public 2050 net zero transition targets. The intent is that this would provide an additional mechanism to recognise progressive company targets, without restricting any of the current mechanisms.</td>
</tr>
</tbody>
</table>

Criterion 8.1: Corporate commitment to achieve the goals of the Paris Agreement

The site’s corporate owner has defined and is implementing a long- and medium-term strategy to reduce its greenhouse gas (GHG) emissions to levels that are compatible with the achievement of the goals of the Paris Agreement, with an aspiration to achieve net-zero GHG emissions through work with policy makers and others.

8.1.1. The site’s corporate owner ascribes publicly to a credible, long-term emissions reduction pathway for the steel industry as a whole that is compatible with the achievement of the goals of the Paris Agreement, and which includes:

a. Explicit projections of long-term steel consumption;

b. Explicit projections for the production and use of primary as well as recycled steel, and the associated GHG emissions; and

c. Explicit assumptions in relation to the public policy and other key conditions on which it is based.

8.1.2. The site’s corporate owner has defined and made public both a long-term emissions reduction pathway and a medium-term, quantitative, science-based GHG emissions target or set of targets for the
corporation as a whole. The corporation’s emissions reduction pathway and medium-term target(s) are compatible with the long-term emissions reduction pathway it ascribes to for the steel industry, and the projections for the production of primary as well as recycled steel as applicable to its own portfolio of sites.

8.1.3. The site’s corporate owner has a credible, documented strategy for the achievement of its corporate level GHG emissions target(s), outlining the timeline for change across its portfolio of sites and identifying the conditions that would need to be in place for the successful implementation of the strategy, and the specific actions, including policy engagement, it is committed to take to help bring these conditions about.

8.1.4 The corporate owner reviews the implementation of its strategy on a regular basis, documents the findings of the review, and updates the strategy to take account of the review’s findings.

8.1.5 The review shows that the corporate owner is implementing its strategy effectively over time.

Guidance:

(8.1.1) An emissions reduction pathway for the steel industry that is compatible with the goals of the Paris Agreement is one which limits the global average temperature to well below 2°C above pre-industrial levels and supports efforts to limit the temperature increase to 1.5°C above pre-industrial levels.

(8.1.1) Long-term in this context means a time horizon of 15 to 35 years.

(8.1.2) Medium-term in this context means a time horizon between 5 and 15 years from the present time.

(8.1.1, 8.1.2) Medium- or long-term refers to the time measured from the start of the relevant implementation period. For example, a ten-year (medium-term) target set seven years ago is still valid even if it has only three years still to run. However, if a medium-term target expires during the period of validity of a certificate, this would create a non-conformity with the requirement of the standard unless it is replaced by an updated medium-term target.

(8.1.2) A technically justified and publicly accessible 2050 net zero emissions target and transition pathway for the company would be sufficient to meet the requirements of 8.1.2. A science-based target (SBT) validated by the SBTi (Science Based Targets initiative) would be sufficient to meet the medium-term requirements of 8.1.2. Other quantitative, scientifically justified targets (or sets of targets, for example for separate processes) may also be recognised, as long as the ambition, quality and coverage of the target is comparable.

(8.1.3) Specific actions may also include investments at the corporate or site levels, building of pilot facilities to develop, test and scale up new technologies, proposition to seek funding through ‘green bonds’, general commitments to upgrade sites over a period of time, etc.

Criterion 8.2 Corporate Climate-Related Financial Disclosure

Drafting Notes

No changes are proposed to the current ResponsibleSteel Standard (v1-0) criterion 8.2 and comments are not requested at this time. The criterion will be reviewed as part of the planned review of the whole ResponsibleSteel Standard before November 2022.
Criterion 8.2: Corporate Climate-Related Financial Disclosure

The site’s corporate owner is implementing the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

8.2.1. The site’s corporate owner has allocated responsibility for oversight of climate-related risk and opportunity to at least one board committee, with an understanding that material climate-related risks and opportunities that impact business strategy will need to be discussed at the full board level.

8.2.2. The site’s corporate owner has a documented commitment in place to implement the core recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD) according to its four pillars - Governance, Strategy, Risk Management, and Metrics and Targets - in accordance with applicable TCFD guidance, within three years of the date of application for the site’s certification.

Guidance:


Implementation in accordance with applicable TCFD guidance requires that the corporate owner makes the recommended disclosures associated with the four core recommendations.

The ResponsibleSteel period of certification is three years. Sites owned by corporations which have not implemented the TCFD recommendations within three years of the date on which their first site applied for certification would not be issued with any further certificates. The failure would also jeopardise the maintenance of any other current site certifications of the corporate owner.

Criterion 8.3 Determination of GHG emissions for the purpose of site level GHG emissions reduction targets and planning only

Drafting Notes

This section includes proposed changes to the wording of the current ResponsibleSteel Standard (v1-0). Additions are highlighted in yellow, and deletions are shown with strikethrough.

- The title of the criterion has been changed to emphasise its relationship to the new criterion 8.4
- The proposed requirement 8.3.2 is new, and makes explicit an obligation which is only implicit in the current ResponsibleSteel Standard (v1-0) – it is proposed that this is a clarification of existing obligations, rather than a new obligation
- A new guidance note is proposed in relation to 8.3.2. This is taken (with minor edits) from an existing guidance note to requirement 8.5.1.a of the current ResponsibleSteel Standard (v1-0). The existing requirements under criterion 8.5 are being revised (see this document, criterion 8.7), and it is proposed that the guidance note should be moved to this new position.
- Additional types of iron bearing inputs are listed in the note to 8.3.1 and 8.3.2, to align with the requirements for determination of upstream indirect (scope 3a) GHG emissions, as proposed in criterion 8.4.
**Criterion 8.3: Determination of GHG emissions for the purpose of site level GHG emissions reduction targets and planning only**

The site measures and records key aspects of its GHG emissions in accordance with a recognised international or regional standard.

| 8.3.1. | There is a system in place to estimate the total GHG emissions (CO₂ e) associated with materials imported to the site from outside the site boundary. |
| 8.3.2. | There is a system in place to estimate the total GHG emissions (CO₂ e) associated with electricity, heat and steam imported to the site from outside the site boundary. |
| 8.3.3. | The total direct GHG (CO₂ e) or CO₂ emissions for the site are measured, recorded and verified in accordance with the requirements of an applicable, recognised international and/or regional standard. |
| 8.3.4. | For sites that produce crude steel, the GHG emissions intensity for the crude steel produced (metric tonnes of CO₂ e / metric tonne crude steel) is calculated in accordance with the requirements of an applicable, recognised international and/or regional standard. |

**Guidance:**

(8.3.1) The system to assess upstream emissions should include a screening of imported materials to identify those that may be associated with significant GHG emissions such as mined materials or hydrogen where relevant.

(8.3.1) The site must provide an explanation of the basis for the calculation, including a listing of the input materials that have been included and excluded from the calculation, and the use of emission factors or other secondary data where used.

(8.3.1) As a minimum, the site must consider the GHG emissions associated with the materials listed in ISO 14404-1:2013 Table 2 and other materials that may be associated with significant GHG emissions. A material’s GHG emissions are not considered to be significant if there is evidence that they are likely to constitute less than 5% of the total GHG emissions associated with all of the materials imported to the site from outside the site boundary.

(8.3.1) The estimate may make use of emission factors such as those referenced in ISO14404 or from other secondary sources where no other reliable data are available. Where such secondary data or emission factors are used, these data must be referenced in the public report specified in 8.5.1 below. More resources should be committed to estimating the more significant sources of emissions, for example through the collection of emissions data from suppliers.

(8.3.1 & 8.3.3) In cases where direct reduced iron (DRI), granulated pig iron (GPI), hot briquetted iron (HBI), pig iron or steel (other than scrap metal itself) is imported to the site from upstream sites, the associated GHG emissions must be accounted for using primary data specific to the input material’s site of production and must not be based on generic or secondary sources of data. The site must ensure that GHG emissions associated with imported iron or steel are clearly and explicitly included in the calculations of GHG emissions and are included in the calculation of GHG emissions intensity in 8.3.4.

(8.3.3) ResponsibleSteel currently recognises the following international or regional standards:

- The GHG Protocol and EN 19694 (parts as applicable) for measurement of GHG emissions by steelmaking and other sites.
- ISO 14404 (parts as applicable) for the measurement of CO₂ emissions by steelmaking sites, as applicable.
Criterion 8.4 Determination of GHG emissions for the purpose of site level GHG emissions intensity performance comparison

Drafting Notes

- This was criterion 8.7 in the previous draft for consultation
- Greater clarity on scope boundaries, and on the application of GHG accounting rules for the determination of the site’s ResponsibleSteel crude steel GHG emissions intensity performance, and for the determination of a product’s embodied carbon declaration, respectively
- Proposed introduction of ResponsibleSteel default emissions factors for upstream indirect (Scope 3a) GHG emissions of input materials, when source- or producer-specific information is not available;
- A default emissions factor of zero for all scrap, rather than only for end-of-life scrap;
- Recognition of the potential value of CO$_2$ sequestration associated with biological sources of charcoal

Criterion 8.4. Determination of GHG emissions for the purpose of site level GHG emissions intensity performance comparisons

In order to market or sell its steel or other products as ResponsibleSteel certified the site must measure and record key aspects of its GHG emissions in accordance with the specifications of this Criterion, in addition to the requirements of Criterion 8.3.

Guidance:

Conformity with these specifications is required for sites in order to market or sell their steel or other products as ResponsibleSteel certified (‘steel certification’). Sites that plan to achieve certification for their products are recommended to align their systems for the determination and reporting of GHG emissions with these requirements as soon as possible. Such alignment is voluntary for sites wishing to achieve ResponsibleSteel ‘site certification’ only, but is obligatory for sites that wish to market or sell ResponsibleSteel certified products.

The requirements of Criterion 8.4 will differ from those of other recognised regional or international standards in some respects. Where definitions or requirements specified in this Criterion conflict with the specifications of other international or regional standards adopted by the site, the definitions or requirements specified in this Criterion take precedence for the purposes of calculating the GHG emissions intensity for products that are to be marketed or sold as ResponsibleSteel certified (see Criterion 8.6 and Criterion 8.7).

Where companies or sites report GHG emissions results determined using different methodologies they should provide an accompanying explanation for any resulting differences in the reported figures.

8.4.1 GHG emissions data – general requirements.

a. The determination of GHG emissions includes consideration of the emissions of carbon dioxide (CO$_2$), methane (CH$_4$), nitrogen trifluoride (NF$_3$), nitrous oxide (N$_2$O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF$_6$), using Global Warming Potential (GWP) values relative to CO$_2$ (CO$_2$e) with a 100-year time horizon as published by the IPCC.
b. The unit of measurement for GHG emissions is tonnes CO\textsubscript{2} equivalent (CO\textsubscript{2} e).

c. When external data sources (such as energy supply emission factors, or GHG emissions data provided by a supplier) are used, the source of the data is documented and available to auditors for inspection, and includes:

- The time period to which the data apply
- The international standard, if applicable, used for the determination of the data
- Whether the data comprise:
  - Supply specific data (representing emissions for the production of a specific material from a specific facility of the producer, or calculated as a weighted average of emissions from specific facilities)
  - Producer average data (representing emissions for the production of a specific material averaged across multiple facilities managed by the producer without consideration of the relative quantities of material from specific facilities)
  - Industry average data (representing emissions for the production of a specific material averaged across multiple facilities managed by multiple producers)
- Whether the data used included consideration of upstream indirect (Scope 3a) GHG emissions, energy indirect (Scope 2) GHG emissions, and/or direct (Scope 1) GHG emissions
- Whether the data included consideration of any offsets.

Guidance:
Additional guidance to be developed as required.

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8.4.2 Scope boundaries

8.4.2.a The scope boundary for the determination of the total GHG emissions for the site includes:

- Upstream indirect (Scope 3a) GHG emissions (see 8.4.3), including GHG emissions associated with:
  - Raw material extraction
  - Raw material preparation
  - Transportation
- Energy indirect (Scope 2) GHG emissions (see 8.4.4)
- Direct (Scope 1) GHG emissions (see 8.4.5)

8.4.2.b (Only applicable to sites where crude steel is produced). The end point of the scope boundary for the determination of the total GHG emissions for the production of crude steel, and therefore for the determination of the ResponsibleSteel crude steel GHG emissions intensity performance, is limited to
those emissions associated with the production of crude steel. GHG emissions associated with further processing of the crude steel after casting (for example, hot rolling, cold rolling, casting, coating) and including the upstream indirect (Scope 3a), energy indirect (Scope 2), and direct (Scope 1) emissions for these processes, are not included for this purpose.

8.4.2.c The end point of the scope boundary for the determination of the embodied carbon footprint for products, co-products and by-products exported from the site is defined in accordance with the applicable international or regional standard used as the basis for the environmental product declaration of the relevant product, co-product or by-product (see 8.4.7 and 8.6.3).

**Guidance:**

**Additional definitions to be included in Glossary:**

**Direct (Scope 1) GHG emissions:** GHG emissions that result from sources within the site boundary.

Note 1. A GHG source is any physical unit or process that releases GHG into the atmosphere

Note 2. Direct (Scope 1) GHG emissions can include the CO₂ emissions from fuel consumption.

(Adapted from Scope 1 definition for an organisation, applied to the site. From GRI Standards, GRI 305: Emissions. Global Sustainability Standards Board, 2016).

**Energy indirect (Scope 2) GHG emissions:** GHG emissions that result from the generation of or purchased or acquired electricity, heating, cooling and steam consumed by the site (Adapted from Scope 2 definition for an organisation, applied to the site. Source GRI Standards, GRI 305: Emissions. Global Sustainability Standards Board, 2016).

**Upstream indirect (Scope 3a) GHG emissions:** Other indirect (Scope 3) GHG emissions that occur outside of the site boundary and upstream of its activities.

**Downstream indirect (Scope 3b) GHG emissions:** Other indirect (Scope 3) GHG emissions that occur outside of the site boundary and downstream of its activities.

(8.4.2.a) Downstream indirect (Scope 3b) GHG emissions outside the site boundary do not need to be considered, with the exception of emissions associated with the disposal of waste (see 8.4.6.h).

NOTE: the end point of the scope boundary for the determination of the embodied carbon footprint for products, co-products and by-products exported from the site may be different to the end point of the scope boundary for the determination of the site’s ResponsibleSteel crude steel GHG emissions intensity performance. GHG emissions associated with the further processing of crude steel after first casting do not affect the site’s ResponsibleSteel crude steel GHG emissions intensity performance, but should be accounted for and recognised in the determination of a product’s embodied carbon footprint, as disclosed in the applicable environmental product declaration.

8.4.3 Upstream indirect (Scope 3a) GHG emissions

The system to estimate the upstream indirect (Scope 3a) GHG emissions of the site meets the following requirements:

a. The determination of the upstream indirect (Scope 3a) GHG emissions of the site includes consideration of the upstream indirect (Scope 3a), energy indirect (Scope 2), and direct (Scope 1) emissions associated with the extraction, processing and transportation of the following input materials:
• Ferrous raw materials: concentrate, direct reduced iron (DRI), granulated pig iron (GPI), hot briquetted iron (HBI), lump ore, pellets, pig iron, sinter, scrap, fines, revert
• Anthracite, charcoal, coke, coking coals, pulverised coal for injection
• Lime, dolomitic lime, dolomite, limestone
• Industrial and fuel gases: natural gas, hydrogen, oxygen
• Ferro-alloys: Cr, Mn, Mo, Ni, Nb, V, Al, B, Co, Mg, P, Si, Ti, W
• Non-ferrous metals: Al, Mg, Sn, Zn

b. The determination of GHG emissions conforms with the guidance provided for specific input materials (see guidance notes and the summary table below).

c. The determination of upstream indirect (Scope 3a) GHG emissions is exclusive of any offsets claimed by upstream suppliers.

d. Data are the most specific available, with source specific data used in preference to producer average data. When neither source specific nor producer average data are available the current ResponsibleSteel default emissions factors for upstream indirect (Scope 3a) GHG emissions of input materials must be used (see Guidance).

e. The site’s upstream indirect (Scope 3a) emissions may be reduced pro rata if imported materials whose GHG emissions have been accounted for are subsequently exported from the site.

Guidance (and see summary table below):

(8.4.3.a) Emissions associated with blast furnace and slag additives, chemicals, desulfurizing products, electrodes, lubricants, oils, refractories, rolls do not need to be considered for the purpose of ResponsibleSteel certification.

(8.4.3.b): Source- and producer-specific average embodied GHG emissions factors (note 1 in table)

Source-specific or producer-specific average GHG data should be determined in conformity with the requirements of ISO 14040 & ISO 14044. In all cases the site shall require the supplier to provide it with the source of the GHG data provided, any standard(s) which were followed for the calculation of the data, and the time period over which data used for the determination were collected (see 8.4.1.b).

Where source-specific or producer-specific average embodied GHG emissions factors are used they must include consideration of the Scope 1, Scope 2 and upstream Scope 3 GHG emissions for production of the input material concerned. Determination of Scope 2 GHG emissions shall be in accordance with the requirements specified in 8.4.4, below.

ResponsibleSteel default emissions factors for upstream indirect (Scope 3a) GHG emissions of input materials (note 2 in table)

ResponsibleSteel will publish default emissions factors for upstream indirect (Scope 3a) GHG emissions for each of the input materials that must be included in the determination of the upstream indirect (Scope 3a) GHG emissions for the site. These default emissions factors will be based on the estimated top decile figure for GHG emissions for the extraction and processing of the applicable material. Where possible embodied
GHG emissions factors will be developed for different sub-categories of material (e.g., separate embodied GHG emissions factors may be provided for grey, blue and green hydrogen).

**Ferrous raw materials (note 3 in table)**

Direct reduced iron (DRI), Granulated Pig Iron (GPI), Hot Briquetted Iron (HBI) and pig iron used as input material must be ResponsibleSteel certified. This ensures that the management of social and environmental impacts for iron- and steelmaking meet ResponsibleSteel requirements, irrespective of whether these input materials are produced within or outside the site boundary for crude steel production itself. Source-specific or producer-specific embodied GHG emissions data for these materials will therefore be available, in conformity with the ResponsibleSteel requirements as specified in Principle 8.

**Scrap (note 4 in table)**

All scrap is assigned an embodied GHG emissions factor of zero. The GHG emissions associated with transportation of the scrap from the commercial scrap collection point to the ResponsibleSteel certified site gate must however be estimated.

**Charcoal (note 5 in table)**

Charcoal is assigned a default embodied GHG emissions factor of zero. On this basis it is treated favourably compared to coal or natural gas as a source of energy for the reduction of iron ore. This default value does not consider the GHG emissions associated with the production of charcoal, nor the potential for net carbon dioxide sequestration from the atmosphere during biological growth. Charcoal may be assigned a negative source-specific GHG emissions factor that takes into account carbon dioxide sequestration during growth only when both of the following conditions are met: 1) the wood for the production of the charcoal is certified as being sourced from a forest or plantation which is certified as meeting the international standards of the Forest Stewardship Council (FSC) (or equivalent); and 2) the net carbon sequestration for the forest or plantation of origin has been independently verified through a credible programme.

The GHG emissions associated with transportation of the charcoal from the site of its production to the ResponsibleSteel certified site gate must be estimated.

<table>
<thead>
<tr>
<th>Ferrous raw material</th>
<th>ResponsibleSteel certified product required as input material?</th>
<th>Source-specific or producer-specific input material embodied GHG emissions factor required?</th>
<th>ResponsibleSteel default input material embodied GHG emissions factor permitted?</th>
<th>Supply-specific transportation data estimate required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Concentrate</td>
<td>no</td>
<td>no</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>• Direct reduced iron (DRI)</td>
<td>√³</td>
<td>√</td>
<td>no</td>
<td>√</td>
</tr>
<tr>
<td>• Fines</td>
<td>no</td>
<td>no</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>• Granulated pig Iron (GPI)</td>
<td>√³</td>
<td>√</td>
<td>no</td>
<td>√</td>
</tr>
<tr>
<td>• Hot briquetted iron (HBI)</td>
<td>√³</td>
<td>√</td>
<td>no</td>
<td>√</td>
</tr>
<tr>
<td>• Lump ore</td>
<td>no</td>
<td>no</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>• Pellets</td>
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<td>√</td>
<td>√</td>
</tr>
<tr>
<td>Material</td>
<td>Pig iron</td>
<td>Sinter</td>
<td>Scrap</td>
<td>Ferro alloys</td>
</tr>
<tr>
<td>----------</td>
<td>----------</td>
<td>--------</td>
<td>-------</td>
<td>--------------</td>
</tr>
<tr>
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<td>✓²</td>
<td></td>
<td></td>
<td>✓³</td>
</tr>
<tr>
<td>Scrap</td>
<td>no</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferro alloys</td>
<td>Cr, Mn, Mo, Ni, Nb, V, Al, B, Co, Mg, P, Si, Ti, W</td>
<td>no</td>
<td>no</td>
<td>✓</td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>Al, Mg, Sn, Zn</td>
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<td>Process coal, coke and charcoal</td>
<td>Anthracite</td>
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<td>Industrial and fuel gases</td>
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</tr>
<tr>
<td>Natural gas</td>
<td>no</td>
<td>no</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**8.4.3.h Summary Table**

8.4.4 Energy indirect (Scope 2) GHG emissions

Energy indirect (Scope 2) GHG emissions are determined in accordance with the following specifications:

a. Imported electricity

- GHG emissions for imported electricity are quantified in accordance with the requirements of ISO 14064-1:2018 Annex E.2 Treatment of imported electricity, using the emission factor that best
characterises the pertinent grid, i.e. dedicated transmission line, local, regional or national grid-
average emission factor.

- Grid-average emission factors should be from the emissions year being reported, if available, or the
  most recent year if not. Grid-average emissions factors for imported consumed electricity shall be
  based on the average consumption mix of the grid from which the electricity is consumed.
- GHG emission reductions based on renewable energy certificates, power purchase agreements,
  virtual power purchase agreements, or green tariffs paid in relation to the site’s sourcing of
electricity are permitted where these meet the requirements of ISO 14064-1:2018 E.2.2 Additional
information.
- GHG reductions achieved through the use of biofuels that do not meet recognised sustainability
standards shall not be recognised as contributing to the achievement of the net GHG reduction
targets associated with the use of imported electricity.

b. heating, cooling and steam

- GHG emissions for imported energy other than electricity are quantified using a source-specific
  emission factor.
- Emission factors should be from the emissions year being reported, if available, or the most recent
  year if not. Average emissions factors for imported energy shall be based on the average
consumption mix of the energy generator.

Guidance:

(8.4.4.a) Recognised sustainability standards for biofuels are currently limited to the voluntary schemes
recognised as meeting the sustainability criteria of the European Union’s Renewable Energy Directive (EU)
2018/2001 (see list of approved Voluntary Schemes).

8.4.5 Direct (Scope 1) GHG emissions

The direct (Scope 1) GHG emissions for the site are measured, recorded and verified in accordance with the
requirements of an applicable, recognised international and/or regional standard and in accordance with the
requirements of Criterion 8.4.6 for the determination of the ResponsibleSteel crude steel GHG emissions
intensity performance for the site, and in accordance with the requirements of Criterion 8.4.7 for the
determination of the allocation of the site’s total GHG emissions to products, co-products and by-products.

Guidance:

(8.4.5) The requirements of Criteria 8.4.6 and 8.4.7 will differ in some respects from those of the regional or
international standard adopted by the site for other purposes. In all cases, the requirements of Criterion
8.4.6 or 8.4.7 as applicable take precedence, for the purpose of determining the ResponsibleSteel crude
steel GHG emissions intensity performance for the site, and for the purpose of determining the allocation
of the site’s total GHG emissions to products, co-products and by-products, respectively.

8.4.6 (Only applicable to sites where crude steel is produced). GHG emissions accounting rules for the
determination of the ResponsibleSteel crude steel GHG emissions intensity performance for the site.

a. GHG offsets

The determination of the site’s scope 1 emissions may not include carbon offsets or similar instruments.

b. Reduction of emissions associated with export of by-products or co-products

There is no reduction of GHG emissions associated with the export of by-products or co-products (including,
for example process gases, dust, sludge, chemicals, oils and energy), for the purpose of determining the
ResponsibleSteel crude steel GHG emissions intensity performance of the site.
c. Allocation of emissions for exported intermediate products

Where a site produces and exports intermediate products such as coke, pig iron or GPI for steelmaking elsewhere, the GHG emissions associated with the production of the exported intermediate products should be deducted pro rata from the site’s determination of its own ResponsibleSteel crude steel GHG emissions intensity performance.

d. Energy use for on-site processing of crude steel

GHG emissions associated with further on-site processing of crude steel are not counted as emissions for the purpose of determining the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

The site should reduce its calculation of energy indirect (Scope 2) GHG emissions in accordance with the imported energy it uses for the on-site processing of crude steel. However, there is no reduction for emissions when excess energy from the production of crude steel is re-used for such further processing (see guidance).

e. Material exported from site as feedstock for downstream processing (carbon capture and utilisation, CCU)

GHG emissions that are captured on site and exported as feedstock for downstream utilisation (for example in the production of ethanol) are not counted as emissions for the purpose of determining the crude steel GHG emissions intensity of the site. Where this is the case the quantity of GHG emissions claimed as captured must be publicly reported and justified.

There is no additional reduction of GHG emissions due to the allocation of GHG emissions to the exported material as a co-product or by-product for the purpose of determining the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

f. Energy exported from the site

There is no reduction of GHG emissions associated with the export of energy from the site (including, for example electricity, steam or heat), for the purpose of determining the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

g. Carbon capture and storage

GHG emissions that are captured on-site and stored permanently on- or off-site are not counted as emissions for the purpose of determining the ResponsibleSteel crude steel GHG emissions intensity performance of the site. For emissions to be considered to be stored permanently the site must provide a public report that quantifies the claimed emissions captured, describes the technology used for storage, and justifies the claim that the stored emissions will not be released to the atmosphere for a minimum 100-year time horizon.

h. Emissions associated with waste exported from the site

GHG emissions associated with the storage or disposal of waste materials, whether on- or off-site, must be estimated and included as an emission for the purpose of determining the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

i. Downstream indirect (Scope 3b) GHG emissions

Downstream life cycle considerations such as product GHG emissions in use and emissions associated with end-of-life disposal of products are excluded from the calculation of the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

Guidance:
NOTE (8.4.6.d) This guidance is consistent with the focus on the GHG emissions associated with crude steel production, and avoids penalising sites that carry out energy intensive processing of crude steel after its production. However, it also means that sites that are efficient at re-using energy generated on site do not benefit from this in relation to their crude steel GHG emissions intensity performance figure.

The energy use associated with such on-site processing of crude steel is however taken into account in the determination of the carbon footprint for any steel product produced at the site, and will therefore be recognised in the environmental product declaration for the product (see Criterion 8.7). Sites that are efficient at re-using energy generated on site are therefore able to claim and benefit from lower GHG emissions for their steel products, and pass these benefits on to their customers in terms of lower embodied GHG emissions, even though it is not considered in the determination of the ResponsibleSteel crude steel GHG emissions intensity performance of the site.

(8.4.6.e and g) The quantity of GHG emissions claimed as captured must be justified. It is recognised that the carbon ‘captured’ may be fully or partially released to the atmosphere when the products of the downstream process are subsequently used – for example as fuel, as feedstock for further industrial processes, or at their end-of-life disposal. It is proposed that the steelmaker should receive the full benefit in terms of the reduction of the crude steel GHG emissions intensity for its site, and that the GHG emissions associated with downstream use should be recognised as direct (Scope 1) emissions downstream. The implication is that the downstream users should not receive any further GHG related credit or benefit from their use of the material, as this has already been fully claimed by the steelmaker at the point of production. Ethanol produced from the capture and use of process gases should be treated on the same basis as ethanol produced from other sources of material for the purpose of assessing GHG emissions associated with its use.

In this case a steelmaking site benefits from exporting GHG emissions that would otherwise be associated its own production of steel. The consistent application of the same approach means that the converse is the case when the steelmaking site exports energy (whether in the form of heat or electricity) to users beyond its site boundary, when the steelmaker continues to own the associated GHG emissions (see guidance to 8.4.6.f, below).

NOTE (8.4.6.f) This approach is consistent with the requirements of ISO 14064-1: 2018 for the treatment of exported electricity (see Annex E.3).

In this case a steelmaking site takes responsibility for the GHG emissions associated with the generation of energy that is used by others. The converse is the case when the steelmaking site exports its by-products as feedstock for downstream carbon capture and utilisation, when the steelmaker benefits from the apparent reduction in its emissions, although these may subsequently be emitted downstream (see guidance to 8.4.6.e, above).

A reduction is permitted when an intermediate energy product such as coke is exported from the site, as in this case the emissions associated with its production are not attributable to the site’s production of crude steel (see guidance to 8.4.6.c, above).

Note that different rules may be adopted for the purposes of GHG allocation to products, co-products and by-products, covered by Criterion 8.4.7 below.

8.4.7 GHG emissions accounting rules for the determination of the allocation of the site’s total GHG emissions to products, co-products and by-products, for the purpose of product carbon footprint declarations (see 8.6.3).

a. GHG offsets
Offsets may be used if these are permitted in conformity with the requirements of the regional or international standard(s) implemented by the site for the determination of product carbon footprints. If offsets are used, they must be disclosed on the environmental product declaration.

b. Reduction of emissions associated with export of by-products or co-products
GHG emissions may be allocated to products, by-products and co-products in conformity with the requirements of the regional or international standard(s) implemented by the site.

c. Allocation of emissions for exported intermediate products
GHG emissions must be allocated to exported intermediate products in conformity with the requirements of the regional or international standard(s) implemented by the site.

d. Energy use for on-site processing of crude steel
GHG emissions associated with energy used for on-site processing of crude steel must be determined in conformity with the requirements of the regional or international standard(s) implemented by the site.

e. Material exported from site as feedstock for downstream processing (carbon capture and utilisation, CCU)
GHG emissions may be allocated to material exported from the site as feedstock for downstream processing (carbon capture and utilisation, CCU) if this is permitted in conformity with the requirements of the regional or international standard(s) implemented by the site. If GHG emissions are allocated in this way, this must be disclosed on the environmental product declaration.

f. Energy exported from the site
GHG emissions associated with products and co-products may be reduced when energy is exported from the site if this is permitted in conformity with the requirements of the regional or international standard(s) implemented by the site. If GHG emissions allocated to products and co-products are reduced in this way, this must be disclosed on the environmental product declaration.

g. Carbon capture and storage
GHG emissions associated with products and co-products may be reduced when site emissions are captured and stored, if this is permitted in conformity with the requirements of the regional or international standard(s) implemented by the site. If GHG emissions allocated to products and co-products are reduced in this way, this must be disclosed on the environmental product declaration.

h. Emissions associated with waste exported from the site
GHG emissions associated with waste exported from the site must be determined in conformity with the requirements of the regional or international standard(s) implemented by the site.

i. Downstream indirect (Scope 3b) GHG emissions
Downstream indirect (Scope 3b) GHG emissions must be determined in conformity with the requirements of the regional or international standard(s) implemented by the site.

NOTE: additional specifications may be provided in future to improve the consistency of embodied carbon emissions data provided in environmental product declarations.

Criterion 8.5 Site-level GHG emissions reduction targets and planning

Drafting Notes
This section includes proposed changes to the wording of the current ResponsibleSteel Standard (v1-0)
criterion 8.4. Additions are highlighted in yellow, and deletions are shown with strikethrough.

- Minor edit to the criterion title
- A number of stakeholders, both business and civil society, commented on the proposed recognition of offsets in relation to energy indirect (Scope 2) GHG emissions, referenced in the new draft criterion (now requirement 8.4.4.a) and recommended that offsets should not be recognised. It was however proposed that renewable energy certificates should be recognised. This recommendation has been included as a proposal in this new draft. If accepted it would be necessary to make the same change in relation to the guidance to requirement 8.5.2, as shown.
- Similarly, it was recommended that sustainability standards for biofuels should be ‘limited to’, rather than ‘include’ the ones listed, and this change is proposed.
- The current ResponsibleSteel Standard (v1-0) had an incorrect cross-reference in the guidance (now numbered 8.5.2). This correction has been reviewed and approved by the ResponsibleSteel Standards, Assurance and Claims Committee (SACC) and is highlighted here for full transparency.

Criterion 8.5: Site-level GHG emissions reduction targets and planning

There is a medium-term GHG emissions target and plan for the site that is aligned with the achievement of the corporate owner’s corporate level GHG emissions target(s).

8.5.1. There is a time-specific, medium-term target for the GHG emissions for the site or defined portfolio of sites that is at or below the trajectory required for the corporate owner to achieve its medium-term carbon emissions target for all of its sites, as specified under requirement 8.1.2.

For steelmaking sites, the target is defined in terms of the GHG emissions intensity of crude steel production (metric tonnes of CO₂ equivalent/metric tonne crude steel) calculated in accordance with the international or regional standard as specified in 8.3.4.

Guidance:

(8.5.1) The site-level target must itself be below the average trajectory required to achieve the corporate owner’s overall corporate level target, OR, if this is not the case, the corporate owner must show that its whole portfolio of sites meets the requirements of 8.5.1 to 8.5.5, and so demonstrate that in combination its sites are on track to achieve its corporate level target.

8.5.2 There is a time-specific, medium-term target to reduce the net GHG emissions associated with the site’s use of imported electricity, where the GHG emissions associated with the use of imported electricity are significant.

Guidance:

(8.5.1, 8.5.2) the medium-term plan should cover activities planned for the following five to fifteen years, in accordance with the site’s financial and operational planning cycle. Longer term planning is also compatible with this guidance, so long as the time-specific milestones provide for effective monitoring in the medium term.

(8.5.2) This requirement could be met, for example, through targets for: the purchase of electricity from low or zero carbon sources, carbon offsets, renewable energy certificates, power purchase agreements, virtual power purchase agreements, or green tariffs paid in relation to the site’s sourcing of electricity. GHG reductions achieved through the use of biofuels that do not meet recognised sustainability standards shall not be recognised as contributing to the achievement of the net GHG reduction targets.
associated with the use of imported electricity. Recognised sustainability standards for biofuels include are currently limited to the voluntary schemes recognised as meeting the sustainability criteria of the European Union’s Renewable Energy Directive (EU) 2018/2001 (see list of approved Voluntary Schemes).

(8.5.2) Where a site introduces a new technology that has a major impact on reducing its direct emissions but results in an increase in the amount of imported electricity, the baseline for reducing net emissions for the imported electricity is set when the new technology is introduced.

(8.5.2) GHG emissions associated with imported electricity are considered significant if they represent more than 10% of the site’s total (direct and indirect) GHG emissions.

(8.5.2) Where imported electricity is generated from the use of the site’s own co- or by-products (e.g., process gases) whose GHG emissions have already been accounted for under 8.5.1, the GHG emissions for this imported electricity are considered to be zero for the purpose of calculating net GHG emissions under 8.5.2.

(8.5.2) Where offsets are used the offsets must be consistent with a specified, recognised international or national standard or regulation and must be publicly reported (see 8.5.1). The implication is that sites would have broad freedom to select their own approach to reducing net GHG emissions and deciding what level of verification might be required to support their approach, so long as the approach is consistent with a recognised standard. Examples of recognised standards include:

- ART-TREES Standard, operational from 2020 under the emergent Forest Finance Facility
- The National Carbon Offset Standard in Australia

(8.5.2) Low-carbon energy procurement must be consistent with a specified, recognised international or national standard or regulation and must be publicly reported (see 8.5.1). Examples of recognised standards include:

- The quality criteria set in the GHG Protocol Scope 2 guidance
- The RE100 credible claims guidance.

8.5.3. There are plans in place, approved by senior management, to achieve the site’s GHG emissions target(s) within the specified timelines as defined in 8.5.1 and 8.5.2. The plans include:

a. Time-specific milestones for each target from present through to the achievement of the medium-term target levels;

b. Explicit quantification of the site’s reduction of direct GHG (CO₂ e) or CO₂ emissions required to achieve the target(s) specified under 8.5.1;

c. Specification of the international or regional standard that will be used to measure progress towards the target, and a description of the elements that are included or excluded from consideration (e.g., whether upstream scope 3 emissions are considered, and how any emissions associated with the site’s products, co-products, by-products or waste are to be taken into account);

d. Consideration of the technology, equipment, management system changes or other options to achieve the targets over time;

e. Consideration of the costs of installing any specified technology or equipment;

f. Consideration of the proposed mechanism for financing the proposed technology or equipment;

g. Consideration of external conditions that will need to be in place for the plan to be successfully implemented, or conditions that might prevent successful implementation.
Guidance:

(8.5.3) The content of the site’s plans is considered to be commercially confidential and shall not be disclosed by ResponsibleSteel or any auditors acting to verify compliance with the requirements of the ResponsibleSteel standard. The specified medium- to long-term targets and progress towards their achievement would, however, be reported.

8.5.4. Progress on the implementation of the plans is monitored and reported to the site’s board or equivalent oversight body on a regular basis, including an explanation of relevant issues such as changes to production in response to market conditions, closures for repairs or other significant factors, and the plans are updated if appropriate.

8.5.5 The site’s medium-term targets, as specified under requirements 8.5.1 and 8.5.2 and progress towards achieving these targets are reported publicly and on a regular basis.

Criterion 8.6 ResponsibleSteel product certification

Drafting Notes

- The specification of revised ResponsibleSteel crude steel GHG emissions intensity performance threshold and three levels of performance, based on research carried out with the consultancy organisation CRU (see Annex 4 for further detail)
- A more flexible approach to the determination of a product’s embodied carbon, recognising a wider range of international standards and tools

Criterion 8.6. ResponsibleSteel product certification

The site may only market or sell products, co-products or by-products as ResponsibleSteel certified when:

- the ResponsibleSteel GHG emissions intensity performance of the site for the production of crude steel has been determined and is below the applicable threshold for ResponsibleSteel steel certification (only applicable to sites where crude steel is produced)
- the ResponsibleSteel GHG emissions intensity performance of the site for the production of crude steel has been verified as being at the level 1, 2 or 3 level (only applicable to sites where crude steel is produced)
- the embodied carbon for the product, co-product or by-product has been determined in accordance with a recognised international or regional standard and with the specifications of 8.4.7

8.6.1. Measurement of GHG emissions, crude steel production and scrap use (applicable to steelmaking sites only)

a. The site measures and records on a consistent basis:

- its annual crude steel production (tonnes)
- the quantity of scrap steel used in its annual production of crude steel (tonnes)
- the GHG emissions (tonne CO₂ e) associated with its crude steel production in accordance with the requirements specified in Criterion 8.4.1 to 8.4.7 of this standard

b. These data are collated and recorded for the site’s previous year of operation.

Guidance:
(8.6.1.b). Site-specific data must be for a specified year of operation and be representative of current production. The year of operation may be defined as a calendar year, or in relation to a reporting year for the site. The completed year immediately prior to the audit shall be used as the default period, but if an earlier year is used this shall be reported and justified.

8.6.2 Calculation of ResponsibleSteel crude steel GHG emissions intensity performance of the site (applicable to steelmaking sites only)

The site calculates and records its ResponsibleSteel crude steel GHG emissions intensity performance in accordance with the equation:

\[ \text{ResponsibleSteel crude steel GHG emissions intensity performance (tonne CO}_2\text{e/tonne) = GHG emissions (tonne CO}_2\text{e) for the previous year of operation / quantity of crude steel produced in the previous year of operation (tonne)} \]

Guidance:
Additional guidance to be developed as required.

8.6.3 Determination of the embodied carbon of products, co-products or by-products to be marketed or sold as ResponsibleSteel certified

a. The site determines the embodied carbon (GHG emissions associated with the product’s life cycle, per functional unit) for any product, co-products or by-product it wishes to market or sell as ResponsibleSteel certified, in conformity with the applicable requirements of specified regional or international standards for reporting GHG emissions for environmental product declarations.

b. The determination includes as a minimum the emissions of the products, co-products or by-products from ‘cradle to gate’ (including emissions associated with raw material extraction, raw material processing, transportation and product manufacturing). Additional aspects (for example in relation to end of life emissions) may be determined, but if they are must be reported separately.

c. The determination is in conformity with the specifications listed in 8.4.7 for the allocation of emissions.

Guidance:

To add to Glossary: Embodied carbon: GHG emissions associated with a product’s life cycle, including at least the emissions associated with raw material extraction, raw material processing, transportation and product manufacturing, reported per functional unit.

(8.6.3) The requirement allows for co-products to be sold as ResponsibleSteel certified if the site wishes. The standard requires that the embodied carbon for the product or co-product is determined and declared if the product/ co-product is to be marketed or sold as ResponsibleSteel certified. It is not a requirement when this is not the case.

A range of standards, methodologies and tools may be used to support the determination and reporting of the embodied carbon for a product. These include:

International and Regional Standards:

- EN 15804:2012 + A2:2019, Sustainability of construction works – Environmental product declarations - Core rules for the product category of construction products
  NOTE: The scope of production specified by ResponsibleSteel (raw material supply, transport and manufacturing) corresponds to the ‘cradle to gate’ life cycle stage modules A1, A2 and A3 of EN 15804.
ResponsibleSteel proposals and consultation questions on GHG emissions requirements for ‘steel certification’

- ISO 14064-2:2019, Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements
- ISO 20915:2018, Life cycle inventory calculation methodology for steel products
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of products and services.

**Tools and methodologies:**

- EUROFER Methodology Report: Life Cycle Inventory on Stainless Steel Production in the EU, 2019
- The European Union Product Environmental Footprint (PEF) methodology (currently in transition phase of development)
- The CARES EPD Tool, for application to construction products
- The International Stainless Steel Federation (ISSF) Life Cycle Inventory / Analysis of Stainless Steel

8.6.4. (Only applicable to sites where crude steel is produced). The site may market and sell steel products produced at the site as being made with ResponsibleSteel certified steel when the following conditions are met:

a. The GHG emissions intensity of the crude steel produced at the site has been determined in accordance with the requirements of Criterion 8.3 and the specifications of Criterion 8.4.

b. The GHG emissions intensity (metric tonnes of CO₂ equivalent/ metric tonne crude steel) of the crude steel produced at the site is below the applicable threshold² as specified for carbon steel or for high alloy steel in accordance with the formula:

\[ y < a - b(x) \]

Where:

- \( y \) = GHG emissions intensity for crude steel production (tonne CO₂ e/ tonne crude steel)
- \( x \) = the proportion of scrap used as an input material compared to crude steel produced
- \( a \) = applicable ResponsibleSteel specified value of GHG emissions intensity for crude steel production using 0% scrap
- \( b \) = applicable ResponsibleSteel specified gradient

² ResponsibleSteel would like to acknowledge the insight of Javier Bonaplata, Head of Strategic Projects at ArcelorMittal, that the proportion of scrap used as an input material can be used as a fair basis for comparing the GHG emissions performance of steelmaking, independently of the particular steel production route (e.g. BF-BOF, DRI or EAF) used. The Net Zero Steel Pathway Methodology Project (NZSPMP) is now applying this insight to the determination of company level decarbonisation targets, and ResponsibleSteel has developed the concept for the determination of site level GHG emissions performance thresholds and levels.
ResponsibleSteel proposals and consultation questions on GHG emissions requirements for 'steel certification'

### GHG emissions intensity for crude steel production

<table>
<thead>
<tr>
<th>Carbon steels</th>
<th>b (gradient)</th>
<th>GHG emissions intensity for crude steel production using 100% scrap (tonne CO₂ e/ tonne crude steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5*</td>
<td>2.25*</td>
</tr>
<tr>
<td>High alloy steels</td>
<td>To be determined</td>
<td></td>
</tr>
</tbody>
</table>

*See Annex 4 for an explanation of the proposed threshold values for carbon steel.

#### Carbon steels

<table>
<thead>
<tr>
<th>Carbon steels</th>
<th>y = GHG emissions intensity for crude steel production using 0% scrap (tonne CO₂ e/ tonne crude steel)</th>
<th>b (gradient)</th>
<th>ResponsibleSteel crude steel GHG emissions intensity performance using 0% scrap as input (tonne CO₂ e/ tonne crude steel)</th>
<th>ResponsibleSteel crude steel GHG emissions intensity performance using 100% scrap as input (tonne CO₂ e/ tonne crude steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 threshold</td>
<td>2.5</td>
<td>2.25</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Level 2 threshold</td>
<td>2.0</td>
<td>1.875</td>
<td>0.125</td>
<td>0.125</td>
</tr>
<tr>
<td>Level 3 threshold</td>
<td>1.0</td>
<td>1.0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*See Annex 4 for an explanation of the derivation of the proposed threshold values for carbon steel.

Equivalent performance levels for high alloy steels are to be determined.

#### Carbon Steel GHG Intensity Performance Bands

(tonnes CO₂e/ tonne crude steel)
Guidance:
Thresholds and performance levels for high alloy steels (including stainless steels) are still to be determined.

DRAFTING NOTE: Consideration was given to specifying a further performance level to represent the minimum feasible level of emissions. This would be the level at which further reductions to achieve ‘net zero’ steel would necessarily require offsetting of these residual emissions.

However, it is proposed not to specify this at this time, firstly because the achievement of ‘net zero’ steel would require an agreed approach to the recognition of offsets; and secondly because we propose that a process to define ‘net zero’ steel should take place in collaboration with other organisations currently working on these issues, with a view to reaching broad agreement. ResponsibleSteel believes that there is a need to develop a commonly recognised definition of ‘net zero steel’ and welcomes further engagement with stakeholders on this topic.

DRAFTING NOTE: Revised GHG emissions intensity performance threshold (or thresholds) and corresponding performance levels for the ResponsibleSteel certification of high alloy steels have not been proposed at this time, but will be discussed with stakeholders during the public consultation period.

Criterion 8.7 GHG emissions disclosure and reporting

Drafting Notes
This section includes proposed changes to the wording of the current ResponsibleSteel Standard (v1.0) criterion 8.5. As the criterion merges criterion 8.5 of the current Standard with new requirements from draft criterion 8.9 of the new requirements for certification of products, the changes from the current criterion 8.5 are not highlighted in yellow or indicated with strikethrough. The notes below describe the changes in detail, and a track changes version is available for download from the ResponsibleSteel website.

- The criterion now covers GHG emissions disclosure and reporting for sites that are ‘ResponsibleSteel certified sites’ only, as well as for those that meet the additional requirements to sell ResponsibleSteel certified products – the ‘track changes’ in the title of the criterion shows the change to the current wording of the ResponsibleSteel Standard (v1.0)
- Sites would no longer be required to report their upstream indirect (Scope 3a) GHG emissions, energy indirect (Scope 2) GHG emissions and direct (Scope 1) emissions separately – only total GHG emissions would need to be reported for site certification. Requirements 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e of the current standard would be deleted. Requirement 8.5.1.d. is incorporated into the new requirement 8.7.1.b, but the reference to offsets has been deleted so as to align with the proposed change to the site level planning criterion (criterion 8.5 in this document)
- Sites producing crude steel would also no longer be required to report their total GHG emissions intensity for crude steel production as specified in 8.5.1.g, in order to achieve site certification only.
- The site’s ResponsibleSteel crude steel GHG emissions intensity performance, scrap use and performance level would need however need to be disclosed by sites selling ResponsibleSteel certified products, and this information would then also be published by ResponsibleSteel on its website.
- The embodied carbon for a product that is marketed or sold as ResponsibleSteel certified would need to be publicly available on request.
CONSULTATION QUESTIONS ON GHG EMISSIONS DISCLOSURE: In addition to consultation on these proposed revisions, and in recognition of concerns raised by the first sites undergoing ResponsibleSteel certification in 2020, we are consulting explicitly on the need for public disclosure of site level GHG emissions information, and asking for stakeholder views on an alternative approach in which information might be provided as an average across multiple sites. Background information and a number of specific consultation questions are given in the box below the draft text of the Standard.

Criterion 8.7: GHG emissions disclosure and reporting

Key measures of the site’s GHG emissions performance are publicly disclosed.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.7.1.</td>
<td>The following information is publicly reported on an annual basis for all ResponsibleSteel certified sites:</td>
</tr>
<tr>
<td>a.</td>
<td>The site’s total GHG (CO₂ e) or CO₂ emissions calculated in accordance with the requirements of Criterion 8.3 and in accordance with the specifications defined in Criterion 8.4 where these have been applied.</td>
</tr>
<tr>
<td>b.</td>
<td>The basis for the determination of the site’s total GHG emissions, including:</td>
</tr>
<tr>
<td></td>
<td>• The international or regional standard(s) used;</td>
</tr>
<tr>
<td></td>
<td>• Whether or not the determination has been prepared in conformity with the requirements specified in Criterion 8.4;</td>
</tr>
<tr>
<td></td>
<td>• Whether the determination includes the purchase of renewable energy certificates or similar mechanisms such as power purchase agreements, virtual power purchase agreements, or green tariffs paid in relation to the sourcing of the site’s electricity, and if so a description of the source and quantity of such offsets or agreements;</td>
</tr>
<tr>
<td></td>
<td>• A clear description of the scope boundary for the determination, including whether the emissions associated with the extraction, preparation, processing and transportation of input materials have been included or excluded in the determination;</td>
</tr>
<tr>
<td></td>
<td>• An explanation of the greenhouse gases that have been taken into account in the determination or, if only CO₂ emissions have been considered, a clear statement to this effect;</td>
</tr>
<tr>
<td></td>
<td>• An explanation of variations in figures reported using different measurement standards if more than one standard has been used by the site and different figures have been reported as a result.</td>
</tr>
</tbody>
</table>

Guidance:

(8.7.1.b) The standard does not specify requirements in relation to the quality or verification of such mechanisms, but is intended to create a public record of such claims, as well as to provide an opportunity for certified sites to communicate their initiatives in this regard.

8.7.2. The following information is publicly reported on an annual basis for ResponsibleSteel certified sites that produce crude steel, in order to market and sell their products as ResponsibleSteel certified: |
| a. | the ResponsibleSteel crude steel GHG emissions intensity performance of the site (metric tonnes of CO₂ e/ metric tonne crude steel), as determined in conformity with the requirements of Criterion 8.4. |
b. the proportion of scrap used as an input for crude steel production at the site (as determined in 8.6.1)
c. the ResponsibleSteel crude steel GHG emissions intensity performance level (1, 2 or 3) that has been achieved.

**Note:** ResponsibleSteel will publish a table of the ResponsibleSteel crude steel GHG emissions intensity performance for all ResponsibleSteel certified steelmaking sites, together the proportion of scrap used as an input material, with explanatory notes based on the information provided in 8.7.1, above.

**Guidance:**

(8.7.2) The ResponsibleSteel website will include a full explanation of the meaning and potential use of the disclosed performance measures.

8.7.3. The embodied carbon for any product, co-product or by-product that is marketed or sold as ResponsibleSteel certified, as determined in 8.6.3. is publicly available on request, together with a declaration of the ResponsibleSteel crude steel GHG emissions intensity performance level (1, 2 or 3) for the crude steel the product is made from, where applicable.

**Guidance:**

(8.7.3) The declaration of embodied carbon for the product must be communicated clearly and separately to any consideration of GHG emissions related to further processes taking place beyond the production site gate, for example in relation to emissions associated with the product’s use and/or end of life disposal, and/or potential benefits associated with its reuse, recovery, or recyclability.

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**ADDITIONAL CONSULTATION QUESTIONS ON GHG EMISSIONS DISCLOSURE**

**Proposed revisions relating to GHG emissions disclosure**

This Criterion now combines Criterion 8.5 of the existing ResponsibleSteel Standard (v1-0) and the previous proposed draft Criterion 8.9 of the ‘ResponsibleSteel Proposals and Consultation Questions on GHG Emission Requirements for the Certification of Steel Products, Draft Version 1-1).

The revised criterion proposes that:

- Sites would no longer be required to report their upstream indirect (Scope 3a) GHG emissions, energy indirect (Scope 2) GHG emissions and direct (Scope 1) emissions separately – only the **total** GHG emissions would need to be reported for site certification.
- Requirements 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e of the current standard would be deleted.
- Requirement 8.5.1.d. would be incorporated into the new requirement 8.7.1.b, with the reference to offsets deleted so as to align with the proposed change to the site level planning criterion (criterion 8.5 in this document)
- Sites producing crude steel would no longer be required to report their total GHG emissions intensity for crude steel production as specified in 8.5.1.g, in order to achieve site certification only.
The site’s ResponsibleSteel crude steel GHG emissions intensity performance, scrap use and performance level would need however need to be disclosed by any sites selling ResponsibleSteel certified steel, and this information would then also be published by ResponsibleSteel on its website.

The revised criterion proposes that the specified GHG data would be disclosed at the site level, and for every certified site (noting that the ResponsibleSteel crude steel GHG emissions performance is only relevant to sites were crude steel is produced).

**Basis for the proposed approach**

Steelmakers around the world measure their GHG emissions in accordance with different international or regional standards – typically either from the EN 19694 series or the ISO 14404 series. Different steelmakers have strong preferences for one or the other set of standards, and after long debate ResponsibleSteel does not consider there is any prospect of achieving consensus agreement to make compliance with one or the other standard obligatory in order to achieve ResponsibleSteel certification. For this reason ResponsibleSteel criterion 8.3 allows steelmakers flexibility in their choice of standard for measuring their site level GHG emissions.

Neither the EN 19694 series standards nor the ISO 14404 series standards are designed to provide a fair basis for comparing the GHG emissions intensities for the production of steel at sites with different technical configurations and input material feedstocks. Consistency and comparability of measurements between different sites is further reduced when sites use one or other standard for the determination of their site level GHG emissions. Furthermore, neither set of standards includes full consideration of the differences in the upstream indirect (Scope 3a) GHG emissions of sites, depending on their sourcing of input materials. For these reasons, amongst others, ResponsibleSteel has developed additional GHG accounting rules, as specified in criterion 8.4, to allow the GHG emissions intensity for the production of crude steel at different sites around the world to be compared fairly, consistently and on a like-for-like basis, irrespective of site configuration, steelmaking technology, or choices of input materials. Sites would be required to implement the additional requirements of criterion 8.4 so that the achievement of a threshold level of performance (as well as further levels of performance), can be determined fairly and consistently for all ResponsibleSteel certified sites.

It was agreed with stakeholders in the discussion of the current ResponsibleSteel Standard that it should be possible for a site to be ResponsibleSteel certified (i.e. for ‘site certification’) even though it does not yet meet a given threshold level of performance in relation to its GHG emissions. This was a purposeful decision, intended to recognise the need to identify and reward steelmaking sites that have made the commitment to decarbonise in the medium term, as specified in criterion 8.5 of this document, even (or especially) if the site’s current level of emissions is relatively high. It was agreed that such sites should not be excluded from ResponsibleSteel certification by the specification of a minimum threshold for their current GHG emissions performance. A minimum threshold level of performance would, however, be required before any site could make claims that its steel products are ResponsibleSteel certified (i.e. for ‘steel certification’). This was seen as an essential requirement to maintain the credibility and value of ResponsibleSteel certified steel.

On this basis it was agreed in 2019:

- That sites should be permitted to implement a choice of recognised regional or international standards as the basis for their measurement of their GHG emissions for ‘site certification’;
- That the resulting inconsistencies of measurements were acceptable, so long as sites were using
these measurements for the purpose of their own site level planning, and not as the basis for the comparison of performance between different sites;

- That site level reporting should be required to provide transparency and demonstrate progress towards reduced GHG emissions, in line with each site’s own medium-term targets.

- That ResponsibleSteel would undertake further work to define acceptable threshold levels of performance that would need to be met before a site could sell its products as being ResponsibleSteel certified (‘steel certification’).

**Why propose to remove the current obligation of a site to disclose its crude steel GHG emissions intensity (ResponsibleSteel Standard (v1-0) requirement 8.5.1.g) as a requirement for ResponsibleSteel ‘site certification’?**

Since 2019 ResponsibleSteel has progressed its work to define acceptable threshold levels of performance that would need to be met before a site could sell its products as being ResponsibleSteel certified, as presented in these new draft requirements. In this context, it is proposed to revisit the existing requirements for GHG emissions disclosures, both to ensure that there is full alignment of the requirements specified in relation to ‘site certification’ and ‘steel certification’, and to review concerns that were raised in relation to site level disclosure during the first certification assessments in 2020.

In this context, it is proposed to delete the current requirement that a site must disclose its GHG emissions intensity (ResponsibleSteel Standard (v1-0) requirement 8.5.1.g) in order to achieve site certification only. The main reason for this is the high risk of confusion. Some ResponsibleSteel certified sites would be measuring and reporting their GHG emissions intensity based on the requirements of ISO 14404 or EN 19694 series standards only. Other ResponsibleSteel certified sites would be measuring and reporting their GHG emissions intensity based on the requirements of ISO 14404 or EN 19694 series standards, together with the additional requirements specified in the new criterion 8.4. Emissions intensity measurements reported without following the requirements of criterion 8.4 will be inconsistent with each other, as well as inconsistent with other measurements that do follow these requirements, and may be misleading as a result.

At the same time, ResponsibleSteel wants to encourage downstream users to use GHG emissions intensity as a key element for their procurement specifications – for example through the SteelZero programme. It is therefore important that the GHG intensity measurements reported by ResponsibleSteel certified sites are consistent.

Taken together it is proposed that it would do more harm than good to require sites to report their GHG emissions intensity performance publicly before they have implemented the requirements of criterion 8.4. Therefore, subject to consultation and membership approval, it is proposed that this requirement should no longer apply for ResponsibleSteel site certification.

It is proposed that the GHG emissions intensity measure for crude steel as determined in Criterion 8.3.4 is sufficient for internal planning and initial target setting at a particular site, but not for comparing performance between different sites. However, the requirement to publicly disclose the GHG emissions intensity of production as currently specified in the ResponsibleSteel Standard (v1-0) 8.5.1.g, should be deleted, and should be replaced by the proposed requirement 8.7.2, to publicly disclose the crude steel GHG emissions intensity for the site only once this has been determined in accordance with the requirements of Criterion 8.4, and only as a requirement for sites in order to market and sell their steel as ResponsibleSteel certified (‘steel certification’).
GHG Disclosure Consultation Question 1: do you support or disagree with the proposal to remove the current requirement for ResponsibleSteel certified sites to disclose their crude steel GHG emissions intensity (determined in accordance with criterion 8.3), as a requirement for ResponsibleSteel site certification?

Why propose to maintain the current requirement to disclose a site’s total GHG emissions as a requirement for ResponsibleSteel site certification (and to remove the detailed reporting requirements (ResponsibleSteel Standard (v1-0) requirements 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e))?

It may then be asked why it is proposed to maintain the current requirement to report a site’s total GHG emissions, while removing some of the detailed reporting requirements.

ResponsibleSteel recognises that site by site comparisons of absolute emissions are of limited use. They do not provide a full picture of performance. For example, they do not provide comparability between sites that are more or less integrated, between sites that use more or less scrap metal as input, or sites that are simply larger or smaller than others.

Nonetheless the disclosure of site level emissions can provide a basis to monitor changes in emissions at a single site over time. Moreover, site level disclosure is already an obligation for steelmakers in some regions of the world, for example in the European Union as a requirement of the EU ETS programme (https://ec.europa.eu/clima/ets/). Imperfect though it is, it is proposed that some disclosure is better than none at all.

In relation to the level of detail specified in 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e, steelmakers have argued that these details may be commercially sensitive, without providing added value in terms of identifying or rewarding site level performance. There is a counterargument that the provision of additional detail is useful to steelmakers, precisely because it helps them to explain the differences that are obscured if only the total GHG emissions for the site are disclosed without further information to allow this to be understood in relation to such factors as the site’s use of imported energy, its scale, differences in site configuration, differences in input materials and such like. However, on balance, it is proposed that steelmakers may be allowed to make their own judgments in this regard, and that the additional detail is not essential to drive change, in line with ResponsibleSteel’s own mission. It is therefore proposed that steelmakers may wish to provide such additional information in order to explain differences in performance, but this would not be required to achieve ResponsibleSteel certification.

GHG Disclosure Consultation Question 2: do you support or disagree with the proposal to remove the detailed reporting requirements (ResponsibleSteel Standard (v1-0) requirements 8.5.1.a, 8.5.1.b, 8.5.1.c, and 8.5.1.e)?

Should the specified GHG information be disclosed for every certified site, or should steelmakers be able to disclose performance averaged across multiple sites?

Finally, as noted above, the revised criterion 8.7 proposes that the specified GHG data would be disclosed at the site level, for every certified site (noting that the ResponsibleSteel crude steel GHG emissions performance is only relevant to sites were crude steel is produced). This would provide for site-by-site comparison between all ResponsibleSteel certified sites.

Some steelmakers have proposed that instead of publishing GHG emissions information for every ResponsibleSteel certified site it should be allowed to publish the GHG emissions information averaged
across a number of different certified sites. It is argued that this is necessary to allow the steelmaker to meet orders in the most efficient way possible, without being constrained as to the particular site or sites that would supply the steel to meet a particular order.

If this option were to be permitted, the ResponsibleSteel Secretariat proposes that as conditions:

- All the sites within the group would have to be certified individually as meeting all the applicable requirements of the ResponsibleSteel Standard to the level required both for ResponsibleSteel site certification and ResponsibleSteel steel certification. This would include the requirement that each site in the group must itself meet the relevant threshold level of performance for ResponsibleSteel steel certification at its own site. Individual site level performance would still be reported to ResponsibleSteel on a confidential basis, but would not be made publicly available by ResponsibleSteel.

- Sites would not be permitted to publish or make separate claims as to their performance – all sites within the group would be listed on the ResponsibleSteel website as having the same GHG emissions performance. Better performing sites would therefore be listed as having a worse level of performance than they actually have, and worse performing sites would be listed as having a better level of performance than they actually have. In other words, worse performing sites should not be able to market themselves using a level of performance averaged with better sites, while at the same time the better performing sites market themselves on the basis of their own, better level of performance.

- Similarly, all sites in the group would be assigned to the same ResponsibleSteel performance level. Better performing sites that on their own might achieve level 2 or 3 performance would instead be required to market their steel products as achieving only the level 1 performance, if that is the average level across the sites in the group.

**GHG Disclosure Consultation Question 3a:** do you support or disagree with the proposal that steelmakers should be permitted to report GHG emissions averaged across multiple sites rather than for every site separately?

**GHG Disclosure Consultation Question 3b:** If steelmakers are permitted to report GHG emissions averaged across multiple sites, do you support or disagree with the proposed conditions?
Annex 1a Glossary (previously approved)

Already included in the ResponsibleSteel Standard v1-0, approved November 2019:

**Carbon dioxide equivalent, CO\(_2\) e:** Unit for comparing the radiative forcing of a GHG to carbon dioxide.


**Crude steel:** Steel in the first solid state after melting, suitable for further processing or for sale. Synonymous with raw steel.

(Adopted from worldsteel).

**GHG offset:** Offsets are discrete GHG reductions used to compensate for (i.e., offset) GHG emissions elsewhere, for example to meet a voluntary or mandatory GHG target or cap. Offsets are calculated relative to a baseline that represents a hypothetical scenario for what emissions would have been in the absence of the mitigation project that generates the offsets. To avoid double counting, the reduction giving rise to the offset must occur at sources or sinks not included in the target or cap for which it is used.


**Net GHG emissions:** The total GHG emissions (CO\(_2\) equivalent) assigned to a product, process or activity minus the total GHG emission reductions claimed by the site as carbon offsets or through other mechanisms.

**Net-zero GHG emissions:** Refers to achieving an overall balance between emissions produced and emissions taken out of the atmosphere. ResponsibleSteel will work with its membership to agree a technical definition for net-zero GHG emissions as applicable to the scope of this standard.

**Steel Product:** Product produced from steel and shipped out from steelworks.

EXAMPLE Hot rolled steel, pickled hot rolled steel, cold rolled steel, finished cold rolled steel, electrogalvanized steel, hot-dip galvanized steel, tin-free steel, tinplated steel, organic coated steel, section, plate, rebar, engineering steel, wire rod, seamless pipe, UO pipe, welded pipe.

(Adopted from ISO20915:2018(en) Life cycle inventory calculation methodology for steel products)
Annex 1b Glossary (new or updated terms)

New terms proposed for inclusion in updated glossary

DRAFTING NOTE: Deletions are indicated like this. Changes are indicated like this.

Carbon intensity of electricity: the CO₂ GHG emissions produced per kilowatt hour of electricity consumed.

Co-product: any of two or more products coming from the same unit process or product system

[Source: ISO 14044:2006, 3.10]

Credit GHG emission: GHG emission that corresponds to exported material and electricity or steam.
(Adopted from ISO 14404:2017 Calculation method of carbon dioxide emission intensity from iron and steel production)

Direct GHG or CO₂ emissions: GHG emissions (CO₂ equivalent) from production facilities within the site boundary. Direct emissions correspond to ‘scope 1’ emissions as referred to in the GHG Protocol.

Direct (Scope 1) GHG emissions: GHG emissions that result from sources within the site boundary.

Note 1. A GHG source is any physical unit or process that releases GHG into the atmosphere

Note 2. Direct (Scope 1) GHG emissions can include the CO₂ emissions from fuel consumption.

(Adapted from Scope 1 definition for an organisation, applied to the site. Source GRI Standards, GRI 305: Emissions. Global Sustainability Standards Board, 2016).

Direct Reduced Iron (DRI): Direct Reduced Iron (DRI) is the product of the direct reduction of iron ore in the solid state by carbon monoxide and hydrogen derived from natural gas or coal.

Most gas-based direct reduction plants are part of integrated steel mini-mills, located adjacent to the electric arc furnace (EAF) steel plant. DRI can be either hot or cold charged to the EAF. Some steel companies ship DRI from their captive direct reduction plants to their remote steel mills and a small volume of DRI is sold to third parties. In India there are many small rotary kiln furnaces producing DRI, known locally as sponge iron, using coal as energy and reductant source. Some of the sponge iron plants are captive to steel mills, but there is a significant domestic merchant market, India producing 57% of its crude steel in electric arc furnaces (2016).


Downstream indirect (Scope 3b) GHG emissions: Other indirect (Scope 3) GHG emissions that occur outside of the site boundary and downstream of its activities.

Embodied carbon: GHG emissions associated with a product’s life cycle, including at least the emissions associated with raw material extraction, raw material processing, transportation and product manufacturing, reported per functional unit.

End of life scrap: scrap from after the end of life of final products

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

Energy indirect (Scope 2) GHG emissions: GHG emissions that result from the generation of or purchased or acquired electricity, heating, cooling and steam consumed by the site.

(Adapted from Scope 2 definition for an organisation, applied to the site. Source GRI Standards, GRI 305: Emissions. Global Sustainability Standards Board, 2016).
**Exported:** in the context of the determination of GHG emissions ‘exported’ refers to energy, materials or products (including intermediate products, by-products or co-products) that leave the site across the site boundary.

**External scrap:** scrap provided from outside of the steelworks, including manufacturing scrap and end of life scrap

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Ferro alloy:** alloy of iron with non-iron alloy metals, such as manganese, silicon or chromium used in the steelmaking process.

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Final product:** product that requires no additional transformation prior to its use

EXAMPLE Automobiles, building structures, building envelopes, packaging.

(Source ISO/TS 18110:2015, 2.2, modified – The example has been added.)

**Global warming potential, GWP:** Factor describing the radiative forcing impact of one mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time (from EN 19694-1: 2016(E))

Note: GWP factors published by the Intergovernmental Panel on Climate Change (IPCC) shall be used.

**Granulated Pig Iron (GPI):** From time to time the supply of hot metal from a blast furnace may exceed the demands of the steel plant, for example due to problems further downstream. In most integrated steel mills, the blast furnace plants are not equipped with pig casters, meaning that the excess hot metal has to be cast into an open-air sand pit, a process known as "pooling" or "beaching." The ensuing dust and fumes constitute an environmental hazard, and the resultant pool or beach iron takes a long time to solidify before it can be crushed into usable material.

Granulation of the excess hot metal is a process that deals with these issues and produces a by-product - Granulated Pig Iron (GPI) - that can readily be used internally, for example as BOF coolant, or sold to third parties as feedstock for electric arc furnaces, cupolas and induction furnaces.


**Greenhouse Gas, GHG:** Gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth’s surface, the atmosphere and clouds

Note to entry: GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃).


NOTE: nitrogen trifluoride (NF₃) was added to the Greenhouse Gas Protocol list of GHGs in 2013.

**Home scrap:** scrap from a downstream steel production process within the steelworks (e.g. rolling, coating) that is returned to steel making processes (e.g. BOF or EAF)

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Hot Briquetted Iron (HBI):** Hot Briquetted Iron (HBI) is a premium form of DRI that has been compacted at a
temperature greater than 650° C at time of compaction and has a density greater than 5,000 kilograms per cubic metre (5,000 kg/m$^3$).

HBI was developed as a product in order to overcome the problems associated with shipping and handling of DRI - due to the process of compaction it is very much less porous and therefore very much less reactive than DRI and does not suffer from the risk of self-heating associated with DRI.

The principal market for HBI is electric arc furnace (EAF) steelmaking, but HBI also finds application as a trim coolant in basic oxygen furnace (BOF) steelmaking and as blast furnace feedstock.


**Imported:** in the context of the determination of GHG emissions ‘imported’ refers to energy or materials that are brought into a site from outside of the site boundary.

**Industrial gas:** gas for steel production other than fuels (3.17) or reducing agent

EXAMPLE Oxygen, nitrogen, argon, hydrogen, carbon dioxide, compressed air.

Note 1 to entry: Hydrogen can be used as a fuel, or is included here as an industrial gas when used as an uncombusted industrial gas, e.g. for the provision of reducing atmospheres in production processes.

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Intermediate product:** the product when an input material undergoes processing on site before being used in subsequent processes. For example, coke may be produced on site from coking coal as an intermediate product prior to its use in the blast furnace. Intermediate products may be used in subsequent processes on site, or may be exported from the site for use outside of the site boundary.

**Internal scrap:** scrap from a crude steel making unit process that is then recycled within the same unit process [e.g. basic oxygen furnace (BOF) or electric arc furnace (EAF)]

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Manufacturing scrap:** scrap from the manufacturing processes of final products, such as automobiles and buildings

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Other indirect (Scope 3) GHG emissions:** indirect GHG emissions not included in energy indirect (Scope 2) GHG emissions that occur outside of the organisation, including both upstream and downstream emissions.


**Pig iron:** Pig iron is the product of smelting iron ore (also ilmenite) with a high-carbon fuel and reductant such as coke, usually with limestone as a flux. Charcoal and anthracite are also used as fuel and reductant. Pig iron is produced by smelting or iron ore in blast furnaces or by smelting ilmenite in electric furnaces.


**Process gas:** Gas that is produced as part of the processes on the steel production site

EXAMPLE Coke oven gas, blast furnace gas, BOF gas.

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Scope of GHG emissions:** Classification of the operational boundaries where GHG emissions occur

**Note I:** Scope classifies whether GHG emissions are created by an organization itself, or are created by other related organizations, for example electricity suppliers or logistics companies.
**Note 2:** There are three classifications of Scope: Scope 1, Scope 2 and Scope 3.


**Scrap:** iron and steel material in metallic form that is recovered in multiple life cycle stages, including steel production processes, the manufacturing processes of final products and the end of life of final products, and is recycled as a raw material for steel production

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)

**Metric Tonne (T):** A metric tonne, equivalent to 1,000 kilograms or 2,204.6 pounds or 1.1023 short ton

(Adopted from worldsteel)

**Upstream indirect (Scope 3a) GHG emissions:** Other indirect (Scope 3) GHG emissions that occur outside of the site boundary and upstream of its activities.

**Waste:** Any substance or object which the holder discards or intends or is required to discard.


**Waste:** materials disposed of in landfills, both internal and external to steel works, or incinerated.

(Source: ISO 20915: 2019(E) Life cycle inventory calculation methodology for steel products.)
Annex 2 Drafting Principles

During preliminary consultation some stakeholders recommended that general principles should be identified to provide a basis for the development of specific requirements in relation to GHG emissions requirements.

The following principles were identified. The principles are not absolute, and there can be tensions between them, but they have been used where possible to provide consistency in drafting.

**General considerations**

The standard’s requirements should be designed to achieve the overall objective of the standard in relation to GHG emissions – the achievement of the goals of the Paris Agreement – as effectively as possible. To do this they need to be written with a clear understanding of how the standard may be used to meet the needs of steelmakers, steel users and specifiers, policy makers, investors and other stakeholders, as well as the potential barriers to its use.

The potential uses of the standard for different business sectors need to be considered, including for example its use in the construction, infrastructure, automotive and packaging industries.

**International applicability**

The standard should be applicable internationally, without favouring or disfavouring steelmakers in any jurisdiction other than as necessary to achieve the objectives of the standard.

**Applicability to all production pathways and steel types**

The standard should be applicable to all iron and steel production pathways, including EAF, DRI, BF-BOF and new technologies based on the use of hydrogen. The standard should be applicable to all steel types, including carbon steels as well as stainless and high alloy steels.

**Scrap and iron ore**

Approximately 80% to 90% of available ferrous scrap is currently recycled. Projections for steel use over the timescale in which GHG emissions reductions have to be achieved to meet the goals of the Paris Agreement foresee iron-ore based steel production continuing at approximately today’s rate through to 2050 and beyond, even if recycling rates are increased, steel is used more efficiently, and steel is replaced for some uses by other materials.

The standard therefore has to address two fundamental challenges for steelmaking over the next 30 years: the reduction of GHG emissions associated with energy generation for the recycling of scrap (Scope 2 emissions); and the reduction of GHG emissions associated with conversion of iron ore into steel. If either of these efforts fail, the steel sector will not be able to achieve the reductions that are required by the Paris Agreement. The standard should be designed to drive GHG emissions reductions for the production of steel using both scrap and iron ore.

**Consideration of the cost of implementation**

Requirements should be designed to minimise the cost of implementation. Cost can be reduced in a variety of ways, including efforts to reduce the direct costs of implementing requirements, by building on existing practices and systems which are already widely implemented, and by seeking to reduce costs of verification. The standard’s requirements should avoid unnecessary costs of implementation and verification where possible.

**Interoperability**
The standard should be designed for interoperability with other standards used to assess GHG emissions for input materials used for steelmaking, and with downstream standards that seek to compare the GHG emissions of steel with the GHG emissions of other materials. Where possible the standard should build on or reference existing standards, including the use of standardised or widely recognised terms and definitions. Where differences are considered necessary these should be clearly explained and justified.

**Whole supply chain approach**

The standard should aim to support the reduction of GHG emissions for the whole supply chain, from cradle to the end of life for a final product. The standard should be designed to avoid unintended negative consequences, for example penalising higher GHG emissions at one stage of production or processing that may result in overall reductions through lower GHG emissions at later stages. However, this does not necessarily mean that the standard itself must take a full life cycle assessment approach. Unintended consequences may be avoided by ensuring that the standard is clear and transparent about what is measured and reported, and ensuring that relevant data are available and can be taken into account for the determination of appropriate life cycle comparisons.

**Independence of site boundaries**

The determination of the GHG measurement for crude steel or a steel product should be the same, irrespective of the physical or legal boundaries of the different sites involved in production. The GHG measurement should not be reduced or increased, for example, depending on whether intermediate processing of input materials occurs on- or off-site.

**Consistency across sites and processes**

The methodology should be consistent across sites and processes. For example, it should treat upstream GHG emissions, emissions credits, on-site carbon capture and storage or utilisation in the same way at all sites.

**Better quality data should be given preference**

The standard should give preference to the use of better-quality data where they are available. Better quality data are data that are more up to date, more specific, or more reliable.

**A conservative approach to data gaps**

The standard should take a conservative approach when there are gaps in data, in line with the requirements of ISO 21970:2017 paragraph 7.1.8 which states that ‘data gaps shall be filled with conservative assumptions’. Source specific data should be used wherever possible in preference to generic industry data for upstream materials, but where generic industry data is used a ‘burden of doubt’ rather than ‘benefit of doubt’ approach should be applied, using high (e.g., top 20th percentile) estimates for embodied carbon for input materials rather than industry average estimates.

**Export or use of intermediate products**

The standard should address GHG emissions associated with the transfer of energy or intermediate materials within and across site boundaries clearly and consistently.

**Consistent approach to GHG allocations to co-products or by-products**

The standard should address GHG emissions associated with the export of co-products or by-products clearly and consistently considering the range of co-products and by-products that may be exported from the site, including for example slags, process gases, dust, sludge, chemicals, oils, and the potential use of such materials as feedstocks for downstream processes such as for the production of ethanol.

**Avoiding double counting and missing emissions**
The measurement and reporting of GHG data should avoid double counting, considering both the use of data by ResponsibleSteel certificate holders and by other users. Nor should emissions be allocated to co-products, by-products or waste if these are not subsequently recognised. The standard should provide a credible, transparent and consistent approach for the accounting of GHG emissions associated with carbon capture, storage and utilisation, both on- and off-site.

Avoiding duplicating the use of existing standards

The ResponsibleSteel Standard should reference rather than duplicate existing tools, standards and methodologies where possible.

Full life cycle GHG emissions

Full life cycle GHG emissions for steel products can be significantly affected by in-use and end of life emissions, for example in relation to the use of galvanised or high alloy steels. The standard should be designed to avoid inadvertently resulting in increases of GHG emissions by penalising steel products with higher embodied emissions, but which may lead to lower overall emissions when their full life cycle performance is considered.
Annex 3 Scrap

Embodied Carbon of Scrap

All scrap, whether internal or external, home, manufacturing or end of life, is treated as having zero embodied GHG emissions. However, the GHG emissions associated with its transportation from the first commercial collection point (for example a ship breaking yard, manufacturing site or commercial scrap yard) to the point of use for steelmaking must be estimated and taken into account.

This is consistent with the approach taken to the determination of upstream indirect (Scope 3a) GHG emissions for other input materials. It also addresses a concern expressed by stakeholders that increasing demand for scrap, driven in part by demand for steel with a low embodied GHG content, may increase the likelihood of scrap being transported for long distances. It would be important therefore to track the increase in GHG emissions associated with such transportation in order to reduce the potential for perverse consequences.

Discussion

The proposed approach is intended to maximise simplicity, in that it does not require steelmakers or their suppliers to quantify the proportion of their scrap supply which meets agreed definitions of home, manufacturing or end of life scrap.

The use of a performance threshold that takes account of the proportion of scrap used as an input material, together with the production loss, reduces any incentive to misclassify primary metal as scrap. If a steelmaker were to do this the apparent emissions intensity of their steel would be reduced, but so, proportionately, would the threshold level of performance that would need to be achieved. If primary metal is classified as scrap and transferred between two sites, this would also result in an increase in the apparent GHG emissions intensity of steel at the production site, unless explicit fraud is committed by one or both sites by classify the sale as steel, and the purchase as scrap.

If a steelmaker does not monitor the amount of home or internal scrap used this will have no significant impact on its determination of GHG emissions intensity over time – it would in effect be treated as a production/ GHG efficiency loss at the point of generation, and then as a production/ GHG efficiency gain at the point of re-use.

It could be argued that classifying all scrap as having zero embodied carbon (rather than applying this only to end-of-life scrap) reduces the relative incentive to increase the reclamation and recycling of end-of-life scrap. However, it is assumed that almost all available home, internal and manufacturing scrap is already utilised, so this is not a significant concern.

Finally, it may be a concern that the proportionate threshold approach reduces the incentive for steel production from scrap, compared to steel production from iron ore. This is true, and is the other side of the coin for a system that is explicitly designed to define GHG emissions intensity performance in a way that takes account of the proportion of scrap used as an input material. However, the standard does not rely only on this one performance measure to drive change. Criterion 8.8 requires that the absolute embodied carbon of the steel product must also be disclosed in an accompanying environmental product declaration, determined in accordance with existing ISO standards (see Criterion 8.8). Downstream users tracking the absolute level of embodied carbon in the steel products they buy will drive incentives for scrap use, as these
have inherently lower embodied carbon emissions. The combination of specifications based on Criterion 8.6 for GHG emissions intensity performance for crude steel production, together with specifications based on a steel product’s carbon footprint (Criterion 8.8), drives both GHG efficiency in production as well as low absolute GHG emissions from increased reclamation and recycling of steel.
Annex 4 Proposed ResponsibleSteel GHG Emissions Performance Threshold and Performance Levels

A major challenge for the drafting of the ResponsibleSteel Standard has been to determine a threshold level of performance for crude steel GHG emissions intensity that would need to be achieved in order for ResponsibleSteel certified sites to market or sell their steel products as being ResponsibleSteel certified. Early efforts to define separate thresholds for specific technologies failed to achieve support.

The most recent draft GHG Emission Requirements for the Certification of Steel Products proposed a new approach, based on the definition of a threshold dependent on the proportion of end-of-life scrap used as an input material for steelmaking. This general approach received a reasonable level of support, with the approval of 64% of stakeholders who expressed a view. However, questions and concerns remained:

- Firstly, there was a high level of agreement that if this general approach was adopted then for both practical and theoretical reasons the threshold should be based on the percentage of all scrap, and not just end of life scrap, used as an input.
- Secondly, the paper proposed that the threshold level of performance required to achieve ResponsibleSteel certification for steel products should be based on the global average (median) level of performance for the production of crude steel for a given level of scrap use. A wide range of views were expressed as to whether this proposed threshold was too demanding, or not demanding enough. The paper also noted that there was a high level of uncertainty about the current level of emissions of the global population of steelmaking sites, taking account of the particular scope boundaries and GHG accounting rules proposed.
- Thirdly, the paper raised the possibility of defining a number of different performance levels or bands, and sought feedback on whether this was a desirable approach.

This annex discusses these three related issues and provides background information in support of the proposals presented in the main text.

End-of-Life Scrap

Steelmakers were almost unanimous in arguing that it is practically very difficult to measure the proportion of end-of-life scrap used as an input material accurately and consistently. Scrap from different sources is often mixed well before it reaches the steelmaker. Although these issues might be resolved over time there would need to be a very convincing reason for needing to make the distinction to justify the effort and cost of separation. The main argument for making a distinction between end-of-life and other scrap had been to create additional incentives for the use of end-of-life scrap. However, in practice almost all manufacturing and home scrap is already used. So, any mechanism to bring more scrap into use can only work by bringing more end-of-life scrap into use – there is no need to try to create a special additional incentive directed at end-of-life scrap specifically. As the main driver for increased scrap use will be the low embodied carbon emissions as declared in a steel product’s environmental product declaration, there does not seem to be a major reason to specify the percentage of end-of-life scrap as the basis for measuring GHG emissions intensity for crude steel production.

Moreover, the performance in terms of GHG emissions does not depend on the origin of the scrap, but on
the quantity of all scrap (secondary metallic input) compared to iron ore based (primary metallic) input material. The comparison of performance between sites, therefore, needs to be based on the total scrap used as an input, not just the end-of-life proportion.

The overall arguments in favour of defining thresholds based on the proportion of total scrap, rather than just end-of-life scrap, were convincing, and this approach has been adopted in the new draft proposals.

**Definition of a threshold level of performance**

Questions about the threshold level of performance required can be split into two related considerations. The first is how the threshold should be set in principle – for example, whether it should be set at a top decile level of performance, top quartile, better than median, or a less demanding threshold level. The second is, if there is agreement in principle, then what are the actual values of GHG emissions for the chosen threshold.

**General approach to setting a threshold**

The first question was subject to a specific consultation question. Stakeholders were asked:

> "Assuming there is some minimum threshold level of GHG emissions performance that must be achieved before steel products can be sold as ResponsibleSteel certified, should the threshold level be:

- Be based on an estimate of the global median level of performance in 2018?
- Be based on an estimate of global best practice (e.g., the top decile level of performance in 2018)?
- Other"

8 out of 21 responses were in favour of a threshold based on the global median level of performance. 5 responses (mainly but not exclusively from civil society respondents) were in favour of a more demanding threshold (top decile, top quartile, or ‘a bit higher’ than median). One respondent was explicitly not in favour of any threshold. One proposed the threshold should be set to exclude the lowest 30%. Other comments included proposals for a threshold that would become more demanding over time, for different regional thresholds, or for thresholds based on different performance bands.

In terms of a simple preference, the option with greatest support (albeit a minority overall) was for a threshold based on the global median level of performance. However, taking account of the full range of responses, the Secretariat believes that the combination of a median level of performance as the basic threshold, *in combination with* the specification of a number of distinct performance bands identifying higher level performance bands would be more likely to command support across the broadest range of stakeholders, and this approach has been put forward for consultation in this revised draft set of requirements.

**Quantitative specification of a threshold**

The second question, if the general approach to setting a threshold (and/or performance bands) can be resolved, is the quantitative level at which the threshold should be set. Clearly it is necessary to set thresholds on the basis of GHG emissions performance data sets that have the same, or nearly the same, scope boundaries and GHG accounting rules as will be later used for assessing site level performance.

The challenge here is that there is virtually no publicly available data on site level GHG emissions performance for different steelmaking sites, and the little data that there is does not provide sufficient detail on scope boundaries and GHG accounting rules to be useful.

ResponsibleSteel therefore worked with the consultancy organisation CRU to use its proprietary CRU Steel
Cost Model and Emissions Analysis Tool to better understand site level emissions, taking account of ResponsibleSteel’s proposed scope boundaries and GHG accounting rules. The results of the work were presented on a public webinar, and are summarised in the figure below.

The figure shows the GHG emissions per tonne of steel produced, for around 290 steelmaking sites across North and South America, Europe, China, India and Asia, including BF/BOF, DRI and EAF-based steelmaking routes, and representing more than 60% of global steel production. The GHG emissions include consideration of upstream indirect (Scope 3a) GHG emissions, energy indirect (Scope 2) GHG emissions, and direct (Scope 1) GHG emissions up to the production of crude steel, and include estimates for GHG emissions associated with raw material extraction, and the upstream transportation of input materials. Site level GHG emissions intensity (on the y axis) is plotted against the proportion of external scrap used as an input material.

A best fit linear regression (excluding the coal-based DRI sites indicated in the top left portion of the plot) gives a global average level of performance represented by the line \( y = 2.59 - 2.42x \). The coal-based DRI sites were excluded from the regression calculation as they have the effect of pulling the regression line higher for low x values, without bringing any coal-based DRI sites beneath the resulting threshold line.

Given the noise in the data we have proposed using figures rounded to the nearest 0.5 tonnes CO\(_2\)/tonne of crude steel produced at 0% scrap input, giving a threshold level performance defined by the line \( y = 2.5 - 2.25x \). Any steelmaker, anywhere in the world, using current technology, is in principle able to reduce its emissions intensity to this level of performance.

Two further performance bands have been defined at \( y = 2.0 - 1.875x \), and at \( y = 1.0 - x \). For sites using low proportions of scrap as an input material these three thresholds define, respectively: better than average BF/BOF based steelmaking; low GHG emission steelmaking based on gas based DRI; and future very low GHG emission steelmaking that will require the use of new technologies. For sites using high proportions of scrap the equivalent performance levels represent: better than average EAF based steelmaking; low GHG emission steelmaking; very low – in effect zero emission – steelmaking.

We propose that these performance bands provide a fair and objective basis to assess and differentiate
between the performance of steelmakers in relation to the GHG emissions intensity of their operations, in line with the terms of reference for the development of the ResponsibleSteel Standard, that it should:

- Encourage the broad participation of steelmakers in both developed and developing countries in the ResponsibleSteel programme;
- Merit the recognition and endorsement of the programme’s civil society supporters;
- Maximise steel’s contribution to a sustainable society through the responsible sourcing of its raw materials and management of the impacts of its production.

Consideration was given to specifying a further performance level to represent the minimum feasible level of emissions. This would be the level at which further reductions to achieve ‘net zero’ steel would require offsetting of these residual emissions.

However, it is proposed not to specify this at this time, firstly because the achievement of ‘net zero’ steel would require an agreed approach to the recognition of offsets; and secondly because we propose that a process to define ‘net zero’ steel should take place in collaboration with other organisations working on these issues, with a view to reaching broad agreement. ResponsibleSteel believes that there is a need to develop a commonly recognised definition of ‘net zero steel’ and welcomes further engagement with stakeholders on this topic.

**Multiple levels of performance**

The proposed approach is based on the recognition of multiple levels of performance. This type of approach was put forward for initial consideration in the previous consultation draft, but was not proposed as a requirement, and was not the subject of an explicit consultation question.

We propose that this approach has a number of advantages:

- It avoids the need to define a single performance threshold, with the inevitable consequence that the threshold is deemed to be too low by some stakeholders, but too high by others.
- As a consequence it avoids the need for a programme to make a binary choice as to whether it will only be open to the best performers in a sector (and therefore not able to engage with the great majority of businesses), or whether it will be open to the majority of businesses (and not able to recognise and incentivise leadership); the programme can recognise businesses which achieve a given threshold, but also differentiate businesses which are demonstrating leadership through higher levels of performance.
- It allows a programme to set and recognise separate performance levels for different attributes, allowing it to recognise and reward businesses that excel in one area of performance, but achieve a lower level of performance in another. This would allow the ResponsibleSteel programme to recognise steelmaking sites that are showing leadership in relation to their GHG emissions intensity while only performing at threshold level in relation to their sourcing of raw materials, or vice versa.
- It allows downstream users and specifiers to make procurement commitments that allow them to work with their existing suppliers, but that can also be upgraded and made more progressive over time as a standard becomes more widely adopted and performance levels improve.
- It allows programmes to engage with a broad range of businesses that have achieved different levels of performance to date, often including businesses in developed as well as developing countries, without having to specify distinct regional thresholds that can cause problems when
commodities are traded internationally.

• It does not require performance levels to be renegotiated on a rolling basis, with the associated uncertainty for both producers and specifiers.

A major disadvantage is that consumers may not make a distinction between different certification ratings at the point of sale, and so the approach is likely to be less effective if the intent is for improvement to be driven by consumers differentiating between products on their basis of differences in the level of performance as communicated at the point of sale, rather than through business-to-business mechanisms.

The multi-level approach is widely recognised and used by many standards and assessment programmes with which ResponsibleSteel members and stakeholders are likely to be familiar, including:

• The Alliance for Water Stewardship (AWS) standards and certification scheme, which defines 3 levels of performance, described as: AWS Core (0 – 39 points), AWS Gold (40 -79 points) and AWS Platinum (80+ points).


• The BES 6001 Framework Standard for Responsible Sourcing developed by BRE Global, which defines 4 performance levels described as: ‘pass’, ‘good’, ‘very good’, ‘excellent’.

• The Considerate Constructors Scheme which applies a star rating, with a minimum performance level of 3 stars, a maximum level of 5 stars, and with half-star levels in between.

• The EU Energy Label: which previously distinguished between products on a performance scale from D up to A++, and which has recently been revised to distinguish between products on a performance scale from G up to A, with the explicit intent that few products should be able to achieve the top ‘A’ grade based on current levels of performance, so the system can drive and recognise improved performance over time.

• The Infrastructure Sustainability (IS) Rating Scheme operated by the Infrastructure Sustainability Council of Australia (ISCA), which defines 5 performance levels described as: bronze, silver, gold, platinum and diamond levels of performance.

• The Initiative for Responsible Mining Assurance (IRMA) standards and certification programme which defines 5 levels of performance, described as: ‘Self-Assessment’, ‘IRMA Transparency’, ‘IRMA 50’, ‘IRMA 75’ and ‘IRMA 100 “Certified”’.

• The Towards Sustainable Mining (TSM) programme of the Mining Council of Canada which defines 5 levels of performance from C through to B, A, AA and AAA.

• The US Green Building LEED programme which defines 4 levels of performance, described as: ‘certified’, ‘silver’, ‘gold’ and ‘platinum’.

It is proposed that a multiple level approach would be appropriate for the ResponsibleSteel programme, and performance levels have been defined on this basis in relation to a site’s crude steel GHG emissions intensity performance and in relation to its sourcing of input materials. We welcome feedback on the proposed approach, as well as on the detail for its implementation, during the public stakeholder consultation period.