ResponsibleSteel GHG
Requirements Finalisation
Stainless/high alloys steel subgroup meeting 1:
10th November 2021
Meeting starts at 10.00am (UK)
ResponsibleSteel™ is committed to complying with all relevant antitrust and competition laws and regulations. Failure to abide by these laws and regulations can potentially have extremely serious consequences for ResponsibleSteel™ and its members, including heavy fines and, in some jurisdictions, imprisonment for individuals. ResponsibleSteel™ has therefore adopted an Antitrust Policy, compliance with which is a condition of ResponsibleSteel™ membership and participation. You are asked to have due regard for this Policy today and indeed in respect of all other ResponsibleSteel™ activities.

Agenda
• Introductions
• Quick review of ResponsibleSteel position on GHG thresholds for carbon steels
• Objectives for this stainless/high alloy subgroup
• Definition of ‘stainless/high alloy’ steel
• Outline of a possible approach to thresholds for stainless/high alloy steels
• Challenges, other options, and discussion of next steps
• Any other issues?
• Sharing minutes/recordings
• **Introductions**
  - Alessandra Gargiulo, The Dragonfly Initiative
  - Camilla Kaplin, Outokumpu
  - Casimiro da Silva Santos, We Mean Business Coalition
  - Claude Frieh, Nickel Institute
  - Ladin Camci, CARES UK
  - Laurent Piranda, Aperam
  - Mark Mistry, Nickel Institute
  - Philipp Oberhummer, BMW
  - Vincent Jonquieres, Aperam
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Quick review of ResponsibleSteel position...

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<tr>
<td>C8.1</td>
<td>✓</td>
<td>Corporate commitment to achieve the goals of the Paris Agreement</td>
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<td>C8.2</td>
<td>✓</td>
<td>Corporate Climate-Related Financial Disclosures</td>
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<td>C8.3</td>
<td>✓</td>
<td>Determination of GHG emissions for the purpose of site level GHG emissions reduction targets and planning only</td>
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<td>C8.4</td>
<td>✓</td>
<td>Determination of GHG emissions for the purpose of site level GHG emissions intensity performance comparisons</td>
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<td>C8.5</td>
<td>✓</td>
<td>Site-level GHG emissions reduction targets and planning</td>
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| C8.6 | ✓ | ResponsibleSteel product certification:  
• GHG emissions intensity threshold achieved  
• GHG emissions intensity performance level 1, 2 or 3  
• Product embodied carbon determination |
| C8.7 | ✓ | GHG emissions disclosure and reporting |

**Site certification**

- Steel production site meets all 12 Principles of the ResponsibleSteel Standard
- Steelmaker has a credible science-based decarbonisation target, aligned with achievement of the goals of the Paris Agreement
- Steelmaker implements TCFD recommendations
- *Site* has a medium-term Paris-aligned target
- Measurement and disclosure of total GHG emissions

**Steel certification (the above, plus...)**

- Responsible sourcing of input materials
- Additional rules to ensure consistent & comparable GHG intensity measurement (C8.4)
- Crude steel GHG emissions intensity performance threshold met, taking account of scrap input (C8.6)
- Measurement and disclosure of crude steel GHG emissions intensity performance, and level (level 1, 2, 3) (C8.7)
- Product GHG footprint data available through environmental product declaration (C8.6)
**Crude steel GHG emissions intensity for the site (C8.4 and 8.6)**

- Site specific not product specific: single measure covers all products for a given site – no need for multiple determinations for different products
- Directly comparable at crude steel point of production
- Level playing field irrespective of technology (BF/BOF, EAF, etc)
- Globally consistent measurement and scope rules (C8.4):
  - upstream Scope 3 emissions (mining, transportation)
  - CCU, CCS, etc
ResponsibleSteel position on GHG thresholds for carbon steels

- Scope 1, 2 and upstream 3
- Three performance levels
  - Level 1: better than 2020 average performance
  - Level 2: ‘lower’
  - Level 3: ‘near zero’
- Review every 5 years, with potential to introduce revised levels after 2-yr transition
The product carbon footprint (Requirements 8.6.3, 8.7.3)

- ResponsibleSteel requires that the product carbon footprint is determined for RS-certified products, and available on request.
- Site has choice of existing standards as recognised by its own customers, markets, etc.
- Includes emissions of on-site processing downstream of crude steel stage, coatings, etc.
- Takes account allocations of emissions between products and co-products.
- Customers can track the embodied carbon in their steel products.
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Objectives for this stainless/ high alloy subgroup

- Recommended definition for ‘stainless/high alloy’ steel
- Recommend application of crude steel GHG threshold levels to stainless/high alloy steels
- Recommend guidance on GHG accounting rules/ format/ verification in relation to input materials (from earlier call with Mark and Claude from Nickel Institute)
- Other issues?
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Definitions of stainless/high alloy steels...

**Stainless Steels**
- > 10.5% chromium
- >12% chromium
- Martensitic, ferritic, austenitic groups

**High-Alloy Steels**
- > 4% alloys
- > 8% alloys
- > 10.5% alloys
- > 12% alloys

**(Low-Alloy Steels)**
- < 1%
- < 5%
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Application of GHG threshold levels to stainless/high alloy steels

- Which alloying metals make a significant contribution to the GHG emissions intensity of high alloy/ stainless steels:
  - Al, B, Co, Cr, Mo, Mg, Mn, Nb, Ni, P, Si, Ti, V, W
  - Ferro alloys
  - Nickel Pig Iron (NPI)
  - Scrap

- Could any of these be excluded from consideration?
- Would we need to consider e.g. Nickel Pig Iron vs Nickel metal as two completely different materials?
For carbon steels, we consider the range of GHG emissions for just two input materials: iron ore and scrap, and can calculate the threshold for any particular percentage of scrap taking account of the emissions intensity for 100% iron ore based steelmaking and for 100% scrap based steelmaking:

Threshold (for given percentage of scrap) = \((\text{emissions intensity of 100% iron ore-based production, } A) \times (\text{percentage of iron ore}) + (\text{emissions intensity of 100% scrap-based production, } B) \times (100 - \text{percentage of scrap})\).

Emissions intensity for 100% iron ore-based production = \(A\)

Emissions intensity for 100% scrap-based production = \(B\)

Threshold at 60% scrap = 40% \(A\) + 60% \(B\)
In principle, we can generalise the same approach to include any number of materials. Could this be a basis for determining thresholds for sites producing stainless and high alloy steels?

Average emissions intensity for 100% metal production (Ni, Cr, etc...)

Benchmark: expected average emissions intensity for a site for this mix of metal production

= 30% x A average + 10% x B average + 30% x C average + 20% x D average + 10% x E average

For different sites the range of ‘high’, ‘average’ and ‘best’ performance, might look quite different, depending on the particular mix of metals used.
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Next meetings

25 November: 11.00 – 12.30pm (UK)
9 December: 11.00 – 12.30pm (UK)

Actions arising...