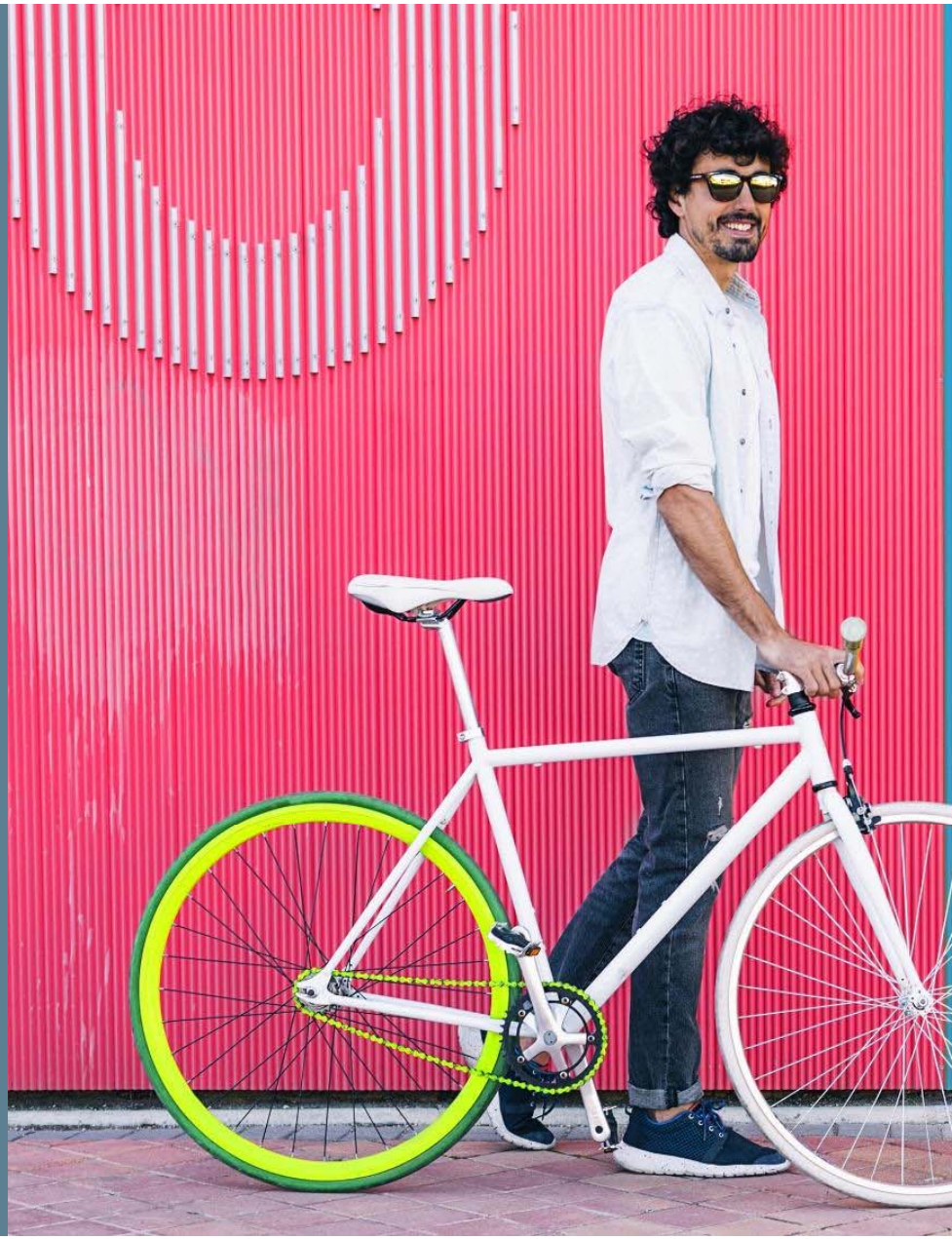

Measuring sustainability: Building credible life cycle pathways for steel decarbonisation

Clare Broadbent

Head of Sustainability

World Steel Association

9th July 2025

Disclaimer

Interest in the steel transition

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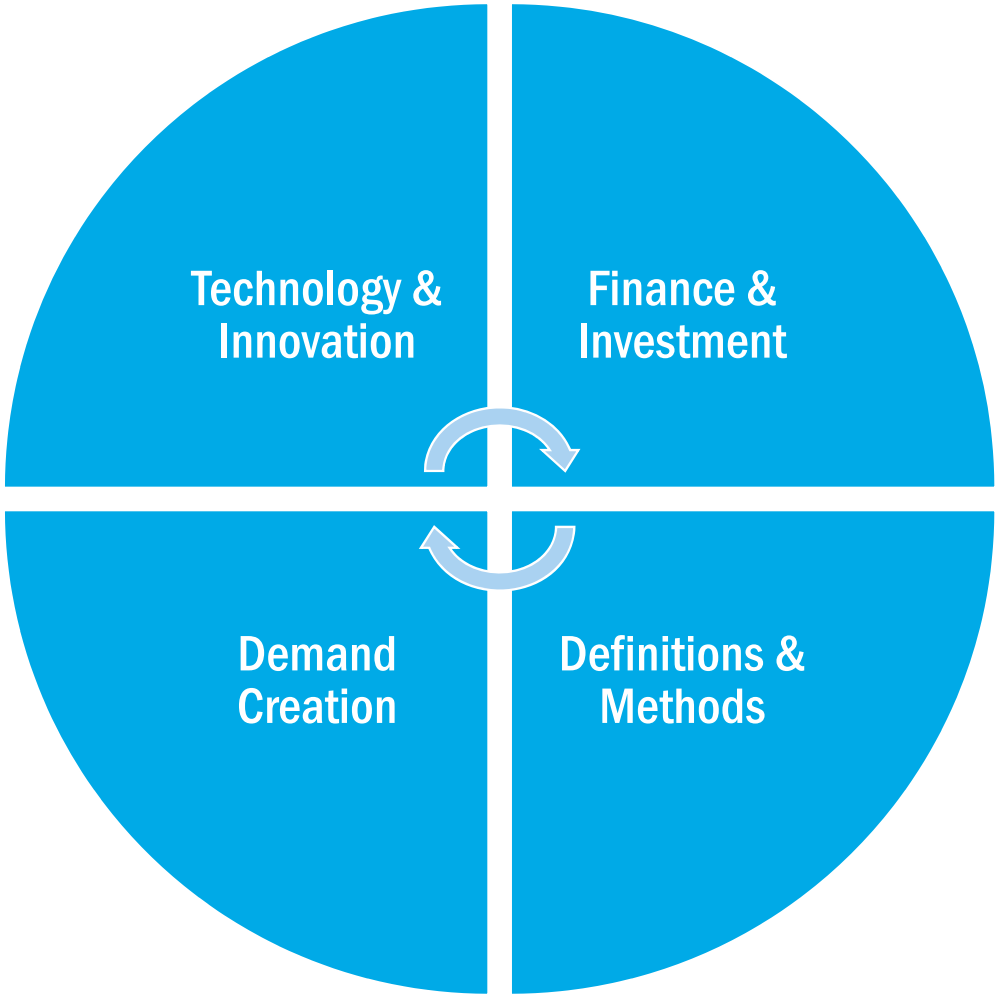
Why are there so many people interested?



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Finance is key

Funding?

First mover?

Premium?

$ ¥ £ €

No agreed upon definitions of low carbon steel

Responsible Steel standards & certification

kloeckner metals

C2F 低碳排放钢发布平台

SUSTAINABLE STEEL PRINCIPLES

LESS LOW EMISSION STEEL STANDARD

iea

First Movers Coalition

INDUSTRIAL DEEP DECARBONISATION
AN INITIATIVE OF THE CLEAN ENERGY MINISTERIAL

GSCC Global Steel Climate Council

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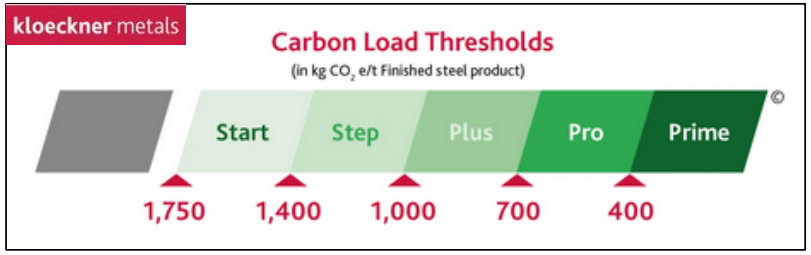
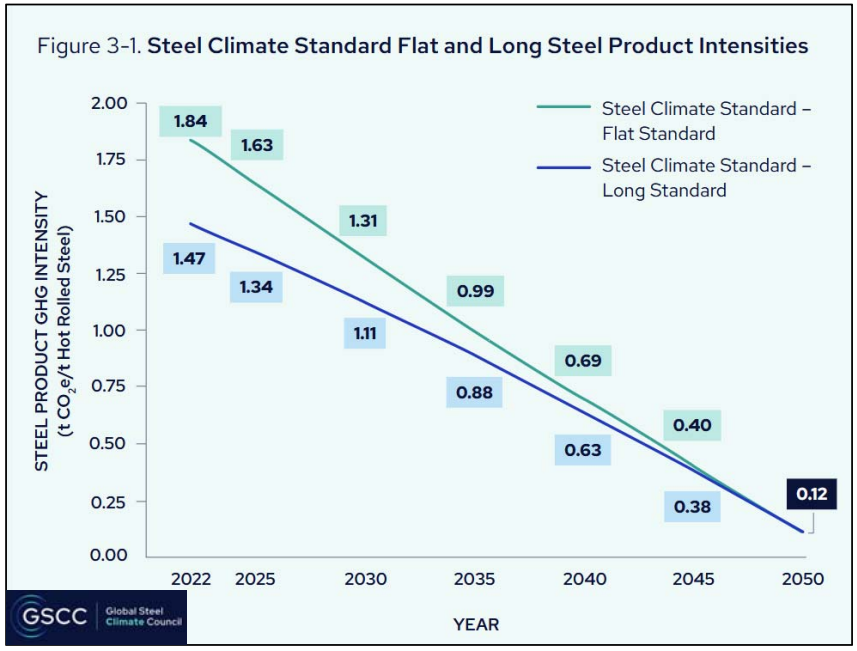
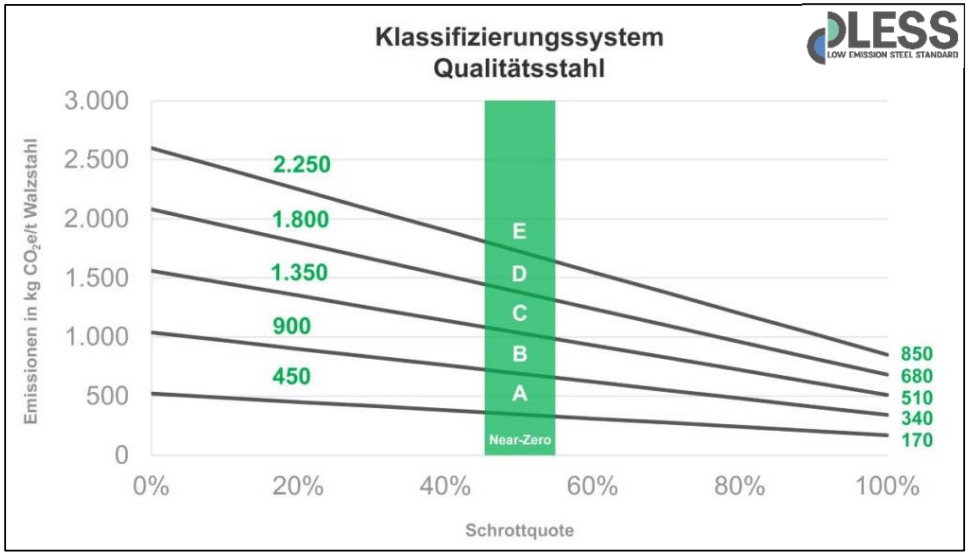
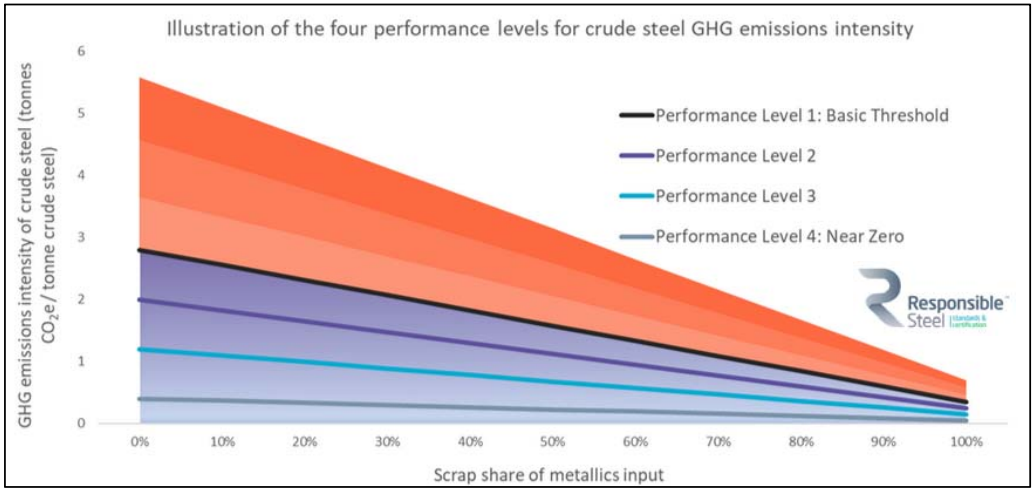
The different approaches









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Steel Standards Principles

Common emissions measurement methodologies to accelerate the transition to near zero

Endorsed by:

What are the main issues?

- So many people developing their own methods – leads to inconsistencies in methodologies
- Alignment of methodologies
  - Consistent system boundary
  - Reporting at crude steel. Additionally at hot rolled, product level?
  - Including mining and transportation?
  - All or partial GHGs?
  - How to account for co-products (slags, gases, …)
  - Data quality requirements and need for primary data

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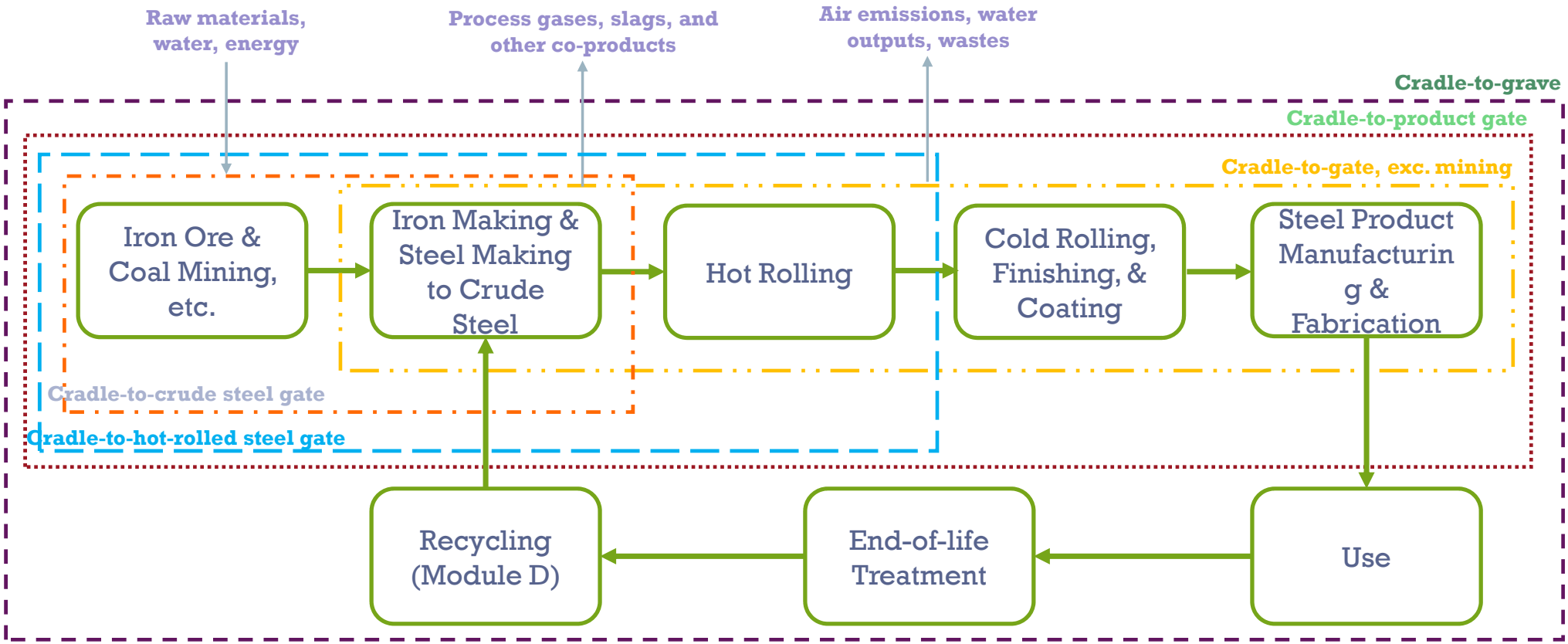
Our mapping

Standard/initiative	Leading/sponsoring organisation(s)	Scope - assessment basis	GHG emissions included	System boundary definition	Scope 2 included?
ACT Initiative	ADEME, France, WBA	Company	CO2	Cradle-to-gate (crude steel)	Yes (location-based)
Buy Clean California Act	CLF, California	Product	All GHGs	Cradle-to-gate (product)	Yes (location-based)
CARES Sustainable Construc...	CARES	Product	All GHGs	Cradle-to-gate (product), Cr...	Yes (location-based)
Catena-X	Catena-X	Product	All GHGs	Cradle-to-gate	Yes (market-based o
China Iron and Steel Associa...	CISA	Product	All GHGs	Cradle-to-gate (product), Cr...	Yes (market-based o
China Iron and Steel Associa...	CISA	Product	All GHGs	Cradle-to-gate (product), Cr...	Yes (market-based o
China/Baowu Low Carbon-E...	Baowu	Site, Product	CO2	Cradle-to-gate (TBD) (partial)	Yes (market-based o
Chinese national standard: G...	SAC	Product	All GHGs	Cradle-to-gate (product) wit...	Yes
Climate Bonds Initiative	Climate Bonds Initiative, GEI	Company, Product	CO2	Cradle-to-gate (product)	Yes (market-based o
Climate Group SteelZero	The Climate Group, Respons...	Site - Crude Steel	All GHGs	Cradle-to-gate (crude steel)	Yes
EN 15804:2012+A2:2019	CEN	Product	All GHGs	Cradle-to-grave	Yes (not specified)
EN 17662 [not yet published]	CEN				
EPA GHG Reporting Rule	US EPA	Site	CO2, CH4, N2O	Gate-to-gate	No
EU CBAM	European Commission	Product	CO2, N2O, PFCs		No
First Movers Coalition	First Movers Coalition, USA, ...	Site - Crude Steel	CO2e	Cradle-to-gate (crude steel)	Yes (not specified)

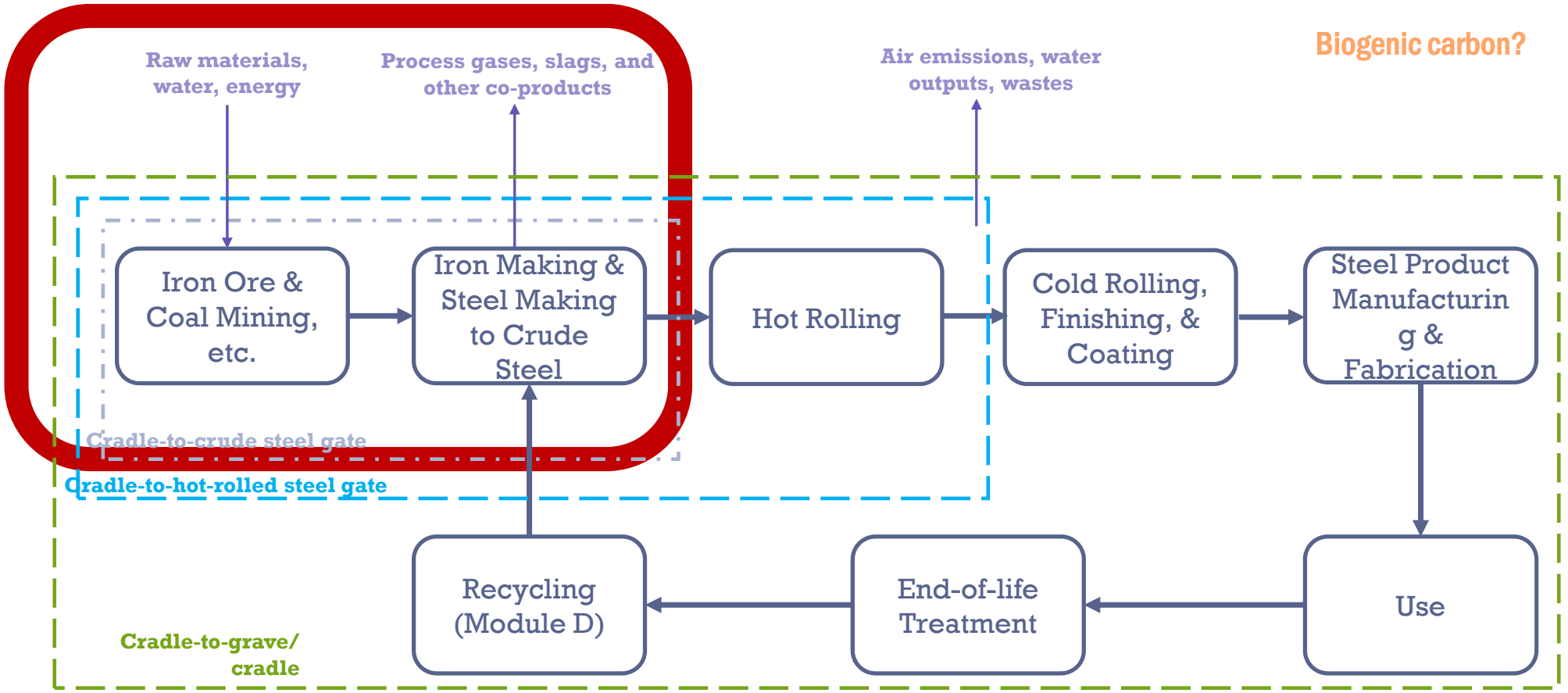
https://worldsteel.org/climate-action/ghg-methodology-mapping/

A variety of reporting boundaries



Boundaries for calculation

CCUS?
Mass balance?
EoL?
Offsets?
RECs
Wastes?
Slags?
Biogenic carbon?



Steel Standards Principles

Working Groups

- Need common terms and definitions
- Common boundaries
- Aligned approaches to data quality requirements
- Interoperability amongst schemes, following a consistent approach

What other topics are important?

- Biodiversity
- Artificial intelligence
- Carbon capture storage and utilization
- Biogenic carbon
- Chain of custody and mass balance models

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Low carbon steel products

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Steel company ‘low emission’ steel products

Note: these brands use different approaches, some of which are based on chain of custody!

GHG chain of custody approaches in the steel industry

Chain of custody approaches in the steel industry

The role of GHG reduction certificates

The steel industry has a long history of producing life cycle assessments (LCA) and carbon footprints (CFP) of its products.

Up until recently, the reductions in greenhouse gas (GHG) emissions by the industry were passed on to customers by including changes in an updated CFP. In recent years, the demand for low-carbon products has been increasing and steel companies are looking for ways to supply low-carbon steel products to the market.

In this context, the use of chain of custody approaches to assign GHG emission reductions to specific products can be a useful tool and its use has been increasing in the steel industry.

Today there is no standardised methodology for GHG chain of custody approaches and companies have developed their own schemes to meet their own needs. As these schemes multiply, the need for industry guidance has become increasingly clear.

Therefore, worldsteel, together with its members, has developed a set of Principles and Guidelines to provide transparency and clarity on the application of chain of custody approaches within the steel industry, to provide guidance to the companies who choose to use these approaches and also to provide input to other organisations

Chain of custody approaches in the steel sector

Download worldsteel Principles (PDF) *(PDF | 108.93 KB)*

worldsteel guidelines for GHG chain of custody approaches

The general approach

CARBON FOOTPRINT

of the product being sold

BANKING REDUCTIONS

from GHG reduction projects

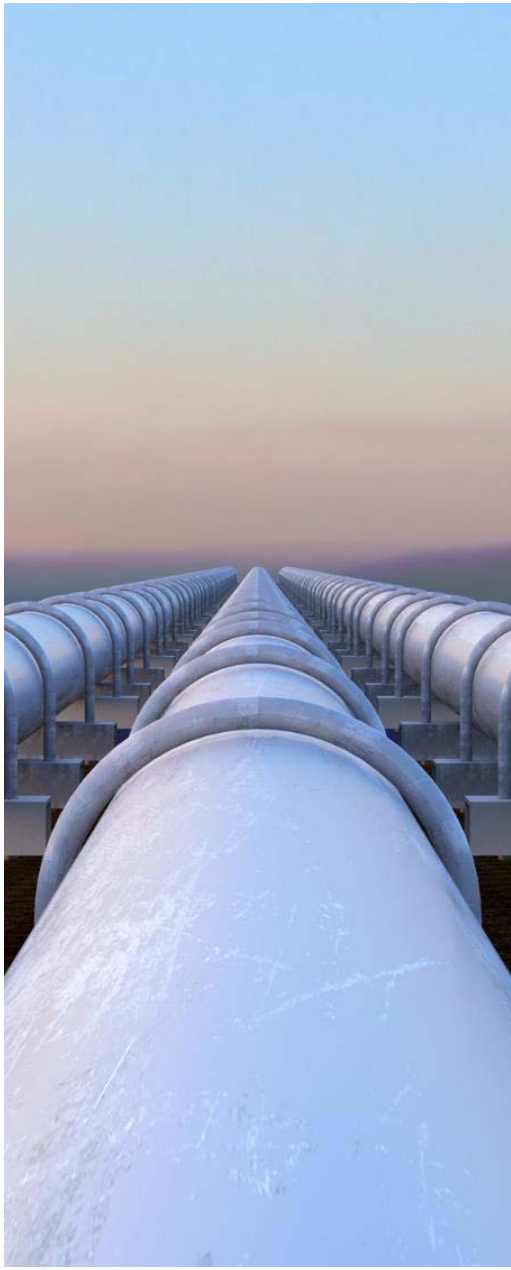
SELLING CERTIFICATES

alongside the carbon footprint

Carbon footprint also includes: Environmental Product Declaration, Life Cycle Inventory, GHG emissions.

The other issues…

- While we're making all this effort to reduce carbon emissions, we need to understand the 'ripple effect'
- While we're busy doing this, our competitors are less concerned and get on with it
  - Cement and concrete assuming
    - slag is a waste and not a valuable input
    - They can use waste plastics and not account for their emissions
  - GCCA developed their own thresholds for concrete based on average EPDs



A key tool to harmonisation of standards

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International standards: ISO

- ISO standards have a global reach and greater perceived neutrality
- worldsteel is a liaison member and key partner in the update of the standards
- Important to maintain the connection between the ISO standards and worldsteel methodologies
- Essential to ensure greater participation of the steel industry in the revision and development of ISO standards
- Ensure relevant links with other bodies: SBTi, GHG Protocol
- Topics: carbon footprints (product, corporate), LCA, Environmental Product Declarations, Chain of Custody, Claims

To conclude

- Encourage development of low carbon transition plans
- Share knowledge on leading practices
  - COP 30, key global events, etc.
- Regular engagements between worldsteel, steel makers, customers & the wider ecosystem
  - develop unified frameworks for carbon reporting and emissions accounting
  - share leading practices
- Customer support:
  - adopt (and being willing to pay for) low carbon steel in its supply chain
  - co-develop technologies with steelmakers
  - advocate for consistent global measurement standards

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