Green steel first movers' challenges: How can buyers support first movers?

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CETPartneship
Catalyzing Green Hydrogen Markets through EU Policy & Procurement, case Steel Industry

9 October 2025

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This is SSAB

103 SEK BILLION

Revenue in 2024

Steelmaking since

1878

15,000

Employees in over 50 countries

8.8 MILLION TONNES

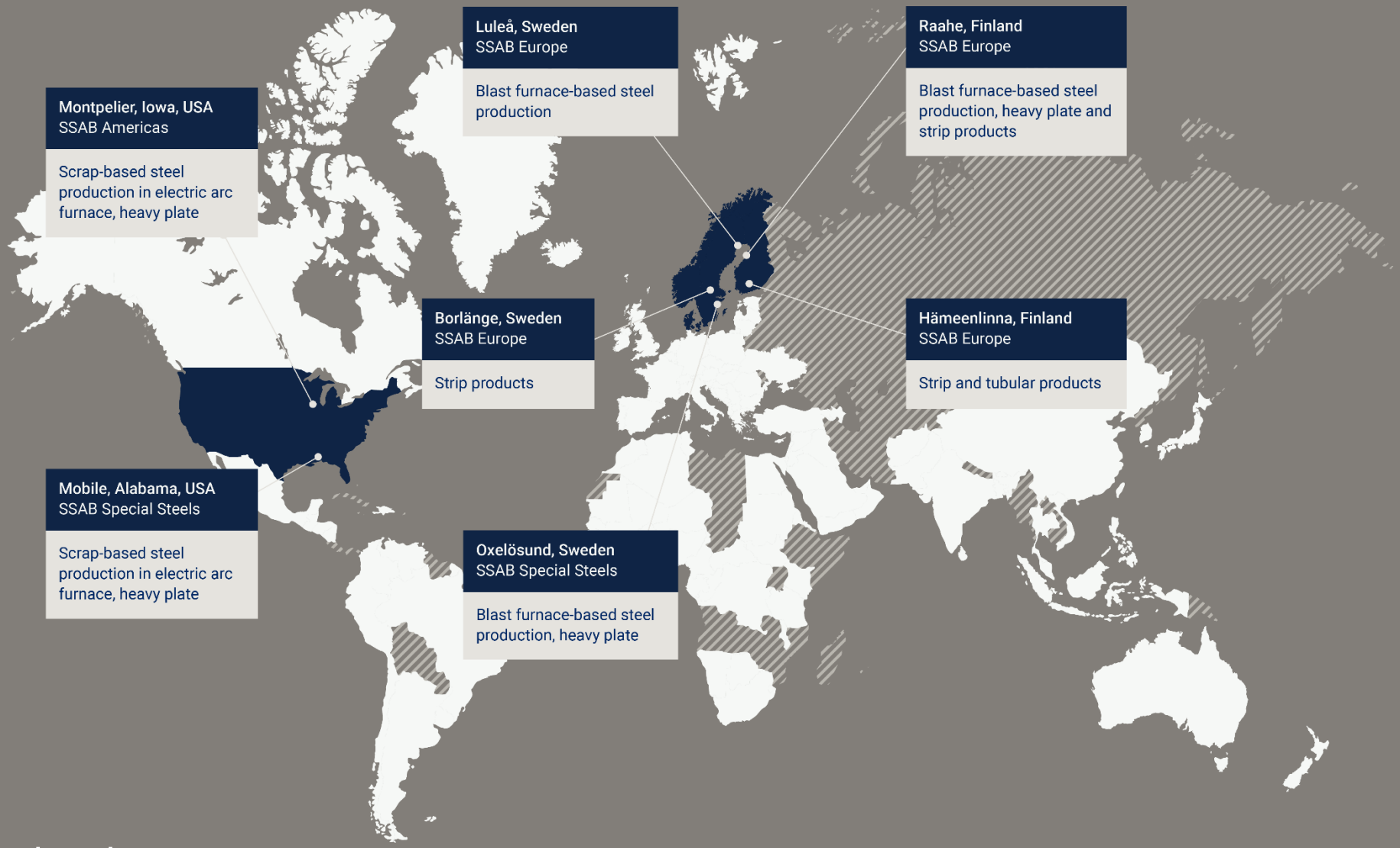
Production capacity crude steel

Headquarters Stockholm, Sweden

Divisions and subsidiaries

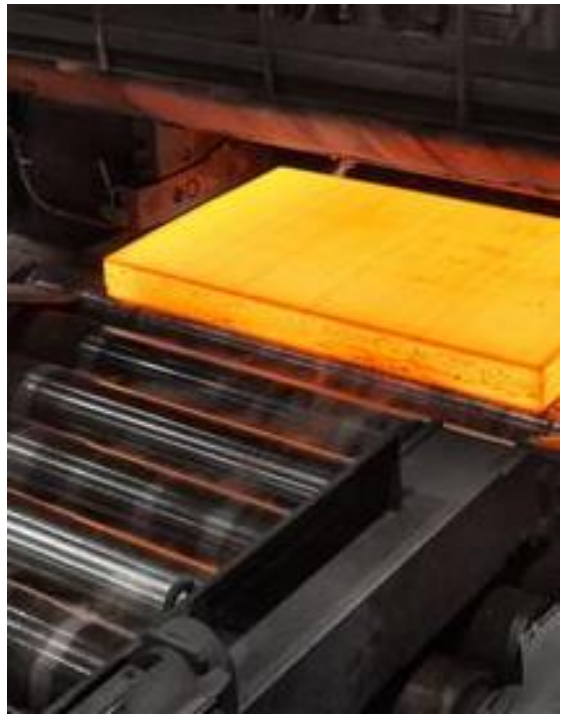
- SSAB Special Steels
- SSAB Europe
- SSAB Americas
- Tibnor
- Ruukki Construction

SSAB transformation



Steel mills in Sweden, Finland and USA

First in fossil-free steel



2017
HYBRIT – Joint venture between LKAB, Vattenfall and SSAB formed

2020
World-unique pilot plant started operation in Luleå

2021
World's first fossil-free steel rolled and delivered to Volvo Group

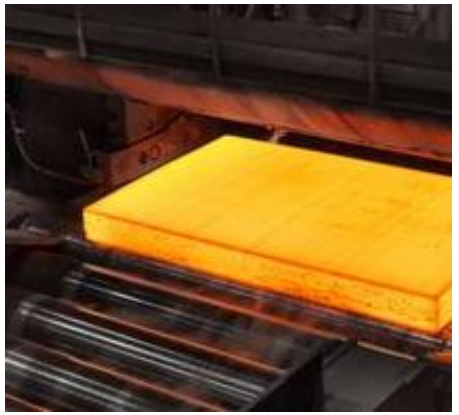
2022
Pilot shipments to strategic customers – 500 tonnes delivered

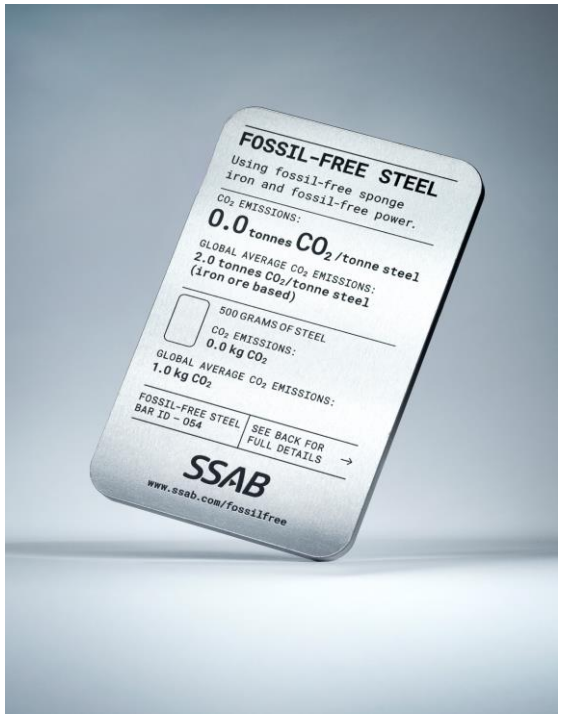
Already moving ahead on our transformation journey

SSAB Zero™	EAF in Oxelösund	Mini-mill investment in Luleå	Transformation investment in Raahe
- Produce SSAB Zero™ in Iowa, USA with finishing in USA, Sweden and Finland - Fossil-free pilot shipments continue	- Replace current blast furnaces and coke plant in Oxelösund - Melt recycled steel and fossil-free sponge iron also in Europe - Decrease of CO_2 emissions corresponding to approximately 3% of Sweden's carbon emissions	- First mini-mill operational, in Luleå Sweden - Close current coal based system - Decrease of CO_2 emissions corresponding to approximately 10 % of Sweden's carbon emissions	- Second transformation investment, in Raahe Finland - Close current coal based system - Decrease of CO_2 emissions corresponding to approximately 7% of Finland's carbon emissions
100-200 ktonnes CO_2 saved per year	**~1.5 million tonnes CO_2 saved per year Start-up 2026**	**~4 million tonnes CO_2 saved per year Start-up 2029**	**~4 million tonnes CO_2 saved per year Start-up: tbc**
Now			

Validation throughout the value chain – investing in the industrialisation of fossil-free iron- and steel production

- The HYBRIT-technology has been validated through pilot scale trials throughout the value chain from ore to steel
- Fossil-free production (virtually no scope 1 and 2 CO2 emissions)
- In HYBRIT's direct reduction process, iron ore pellets are converted into iron using 100 % fossil-free hydrogen.
- The results pave the way for further development and implementation of the HYBRIT-technology on an industrial scale
- Next step - industrial demonstration





Findings from the R&D pilot project spanning 2018-2024:
https://www.hybritdevelopment.se/en/fossil-free-steel-production-ready-for-industrialisation/

A growing number of fossil-free partners

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Demand policy support for the transformation

European steel market under pressure - timely and focused response from the EU COM

Key areas for SSAB	Description
Climate ambition	Important to keep ambitious climate targets and long-term, stable climate policies to stimulate investments in decarbonized solutions
Trade	Trade distortions and structural problem with global overcapacity needs to be addressed. Welcome focus on a new safeguard /tariff quota system in the EU to tackle the overcapacity problem
CBAM	Welcome upcoming proposals to extend scope to downstream products and to secure level-playing field for exports. However, SSAB would like to see an inclusion of indirect emissions (Scope 2)
Lead markets	**Important that the EU COM has identified lead markets as a key business driver. SSAB agrees on the need for demand policy measures to support the transition**

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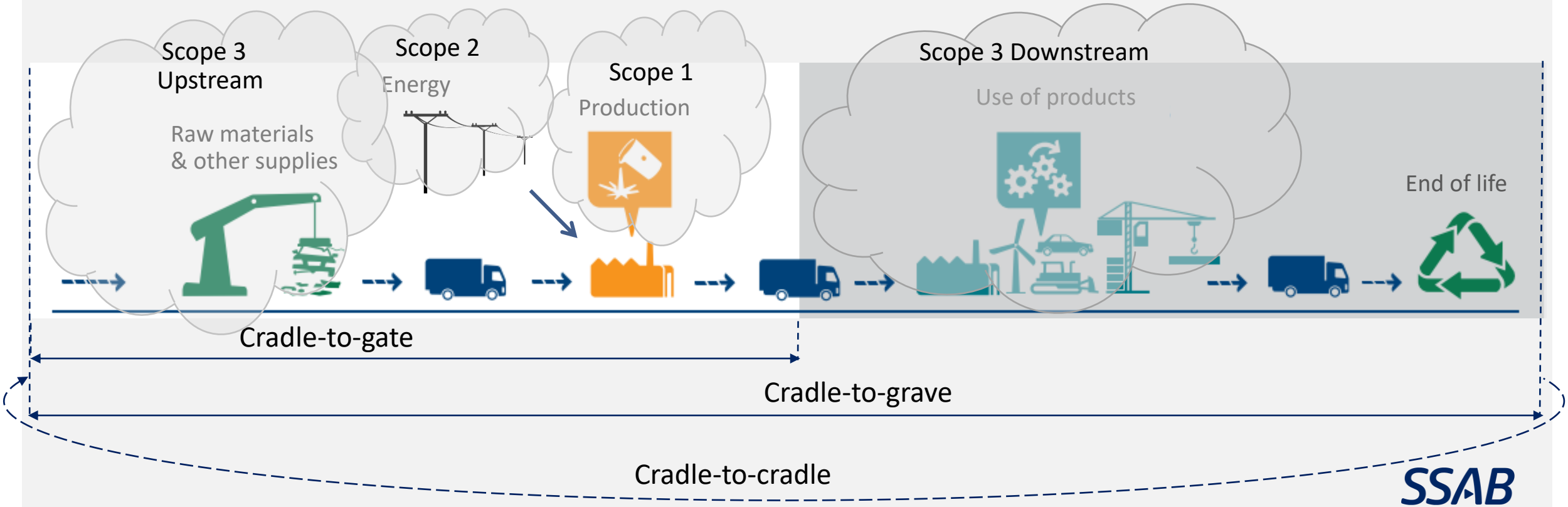
On lead markets: Need for well-designed policy to boost demand for decarbonized steel

- **IEA report** *'Demand and Supply Measures for the Steel and Cement Transition'* rightly underlines **key role for governments/policy makers** to reduce risk and increase certainty for companies in the transition.
- Targeted demand side policy measures must be prioritized and results in concrete measures, such as:
  - Align **public procurement** rules with sustainability goals. Introduce **non-price criteria**, such as resilience, environmental and climate criteria
  - Consider setting **quotas** in sector-specific initiatives and/or **embodied carbon limits** in product standards, for eg. white goods, vehicles and buildings
- To underpin demand-side measures/policies - a clear **definition and classification system** for low- and near-zero emission steel is needed.

What is Life Cycle Assessment (LCA) and Carbon Footprint?

- There are many life cycles
  - Important to look at the total: **cradle-to-cradle** including Scope 1—3
- Iron ore based steel is the origin of scrap
  - Since this is a valuable raw material it gives a credit in Environmental Product Declarations, EPDs



The SSAB EPD shows world leading LCA values

TABLE 2A. POTENTIAL ENVIRONMENTAL IMPACT PER 1,000 KG OF HOT ROLLED STEEL SHEETS AND COILS

Parameter	Unit	A1-A3	C3	C4	D
Global warming potential (GWP)	kg CO_2 equiv.	2.16E+03	2.49E+00	7.44E-01	-1.48E+03
Eutrophication potential (EP)	kg $(PO_4)^{3-}$ equiv.	4.16E-01	4.22E-03	5.00E-04	-2.17E-01
Acidification potential (AP)	kg SO_2 equiv.	3.90E+00	1.76E-02		
Photo-oxidant formation potential (POCP)	kg ethene equiv.	4.38E-01	1.95E-03		
Ozone Layer Depletion Potential (ODP)	kg CFC11 equiv.	9.67E-11	8.13E-15		
Abiotic depletion potential: fossil (ADP-fossil)	MJ, net calorific value	2.36E+04	4.83E+01		
Abiotic depletion potential: elements(ADP-elements)	kg Sb equiv.	1.27E-03	2.80E-06		

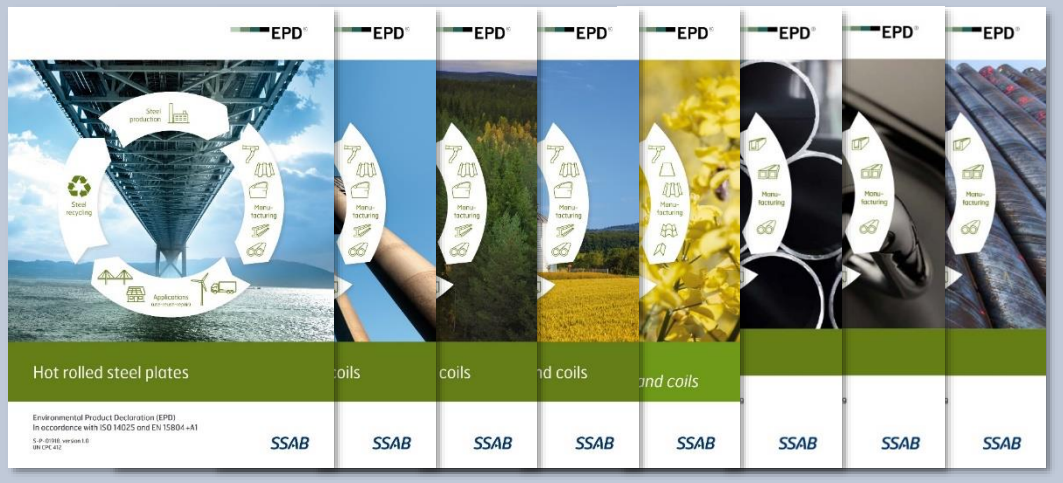
- The SSAB LCA CO_2 emission:
  2.16 – 1.48 = 0.68 ton CO_2/ton steel

- Comparable to scrap based production
  - With fossil-free steel, SSAB will be significantly lower

SSAB's Environmental Product Declarations

- Independently verified documents
  - Transparent and comparable information about the life-cycle environmental impact
  - Using LCA methodology
- All product groups
  - Hot rolled steel plates
  - Hot rolled steel sheets and coils
  - Cold rolled steel sheets and coils
  - Metal coated steel sheets and coils
  - Color coated steel sheets and coils
  - Tubular Products

- Registered in the International EPD® System
  - www.environdec.com and www.ssab.com
  - Ruukki Construction EPDs are also available for Roofing and Components in the Finnish RTS EPD



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A range of initiatives for the transition to near zero emission steel production

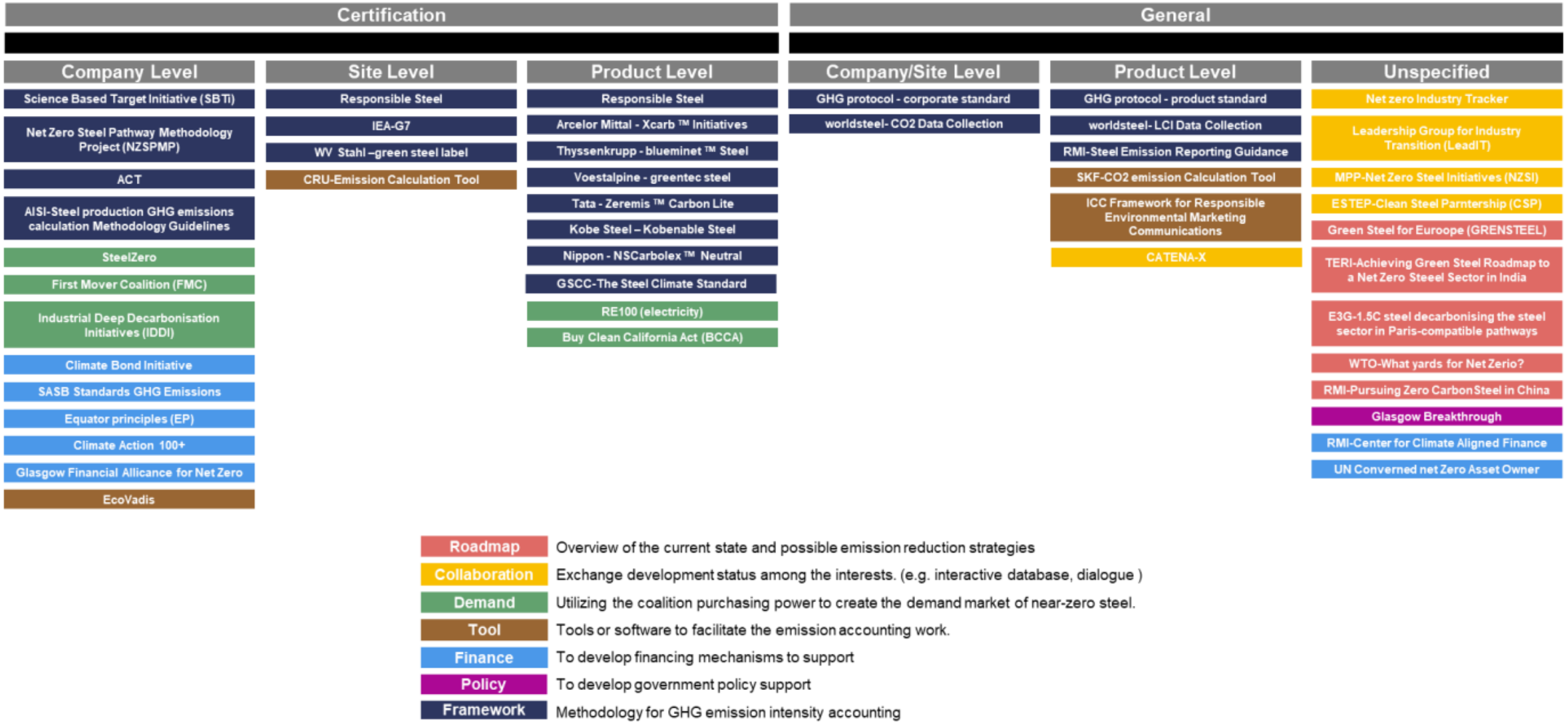

Figure: Overview of initiatives for near zero steel production. Source: URSTARK report (2023)


Boosting Demand:
Creating Lead Markets for
Near Zero Emission Steel
in the EU
Policy Brief | August 2025
outokumpu
SSAB
Metso
AFRY
Kalmar
fortum
Stegra
YIT
Finnish Energy

Boosting demand: Need for well-designed policy to drive decarbonization and help ensure demand

- We welcome the inclusion and highlight the importance of the steel industry among the sectors to which the upcoming Industrial Accelerator Act (IAA) will apply.
- Near zero emission steel production is already being pioneered in the EU, and Europe can lead globally in clean steel markets by acting now to boost demand through clear EU-wide labels for near-zero steel, as well as mandates for near-zero steel in public procurement.
- In today's uncertain geopolitical landscape—where global competitors actively support their domestic industries and the principles of free trade are increasingly under pressure—Europe must take decisive action to strengthen its resilience while advancing the green transition by having:
  - **Ambitious climate targets**
  - **Demand side measures/policies**
  - **EU public procurement rules**
  - **Strengthening implementation of existing rules**
  - **EU definition and classification system for low- and near-zero emission steel** is needed.

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Conclusion and call to action

We call on the European Commission and EU Member States to:

1. Introduce harmonised labelling and definitions for low and near zero emission steel – such as those proposed by the LESS standard and Ecodesign for Sustainable Products Regulation (ESPR).
2. Update public procurement legislation as proposed by the Industrial Accelerator Act (IAA) to include *EU* rules aligned with sustainability goals. Binding environmental and climate criteria should be introduced.

Together, these measures will de-risk first movers, unlock industrial investments, and send a strong political signal that the EU is committed to climate-smart growth.

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