



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

Kimmo Järvinen, Head of EU Governmental Affairs, SSAB

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

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**SSAB**

# 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

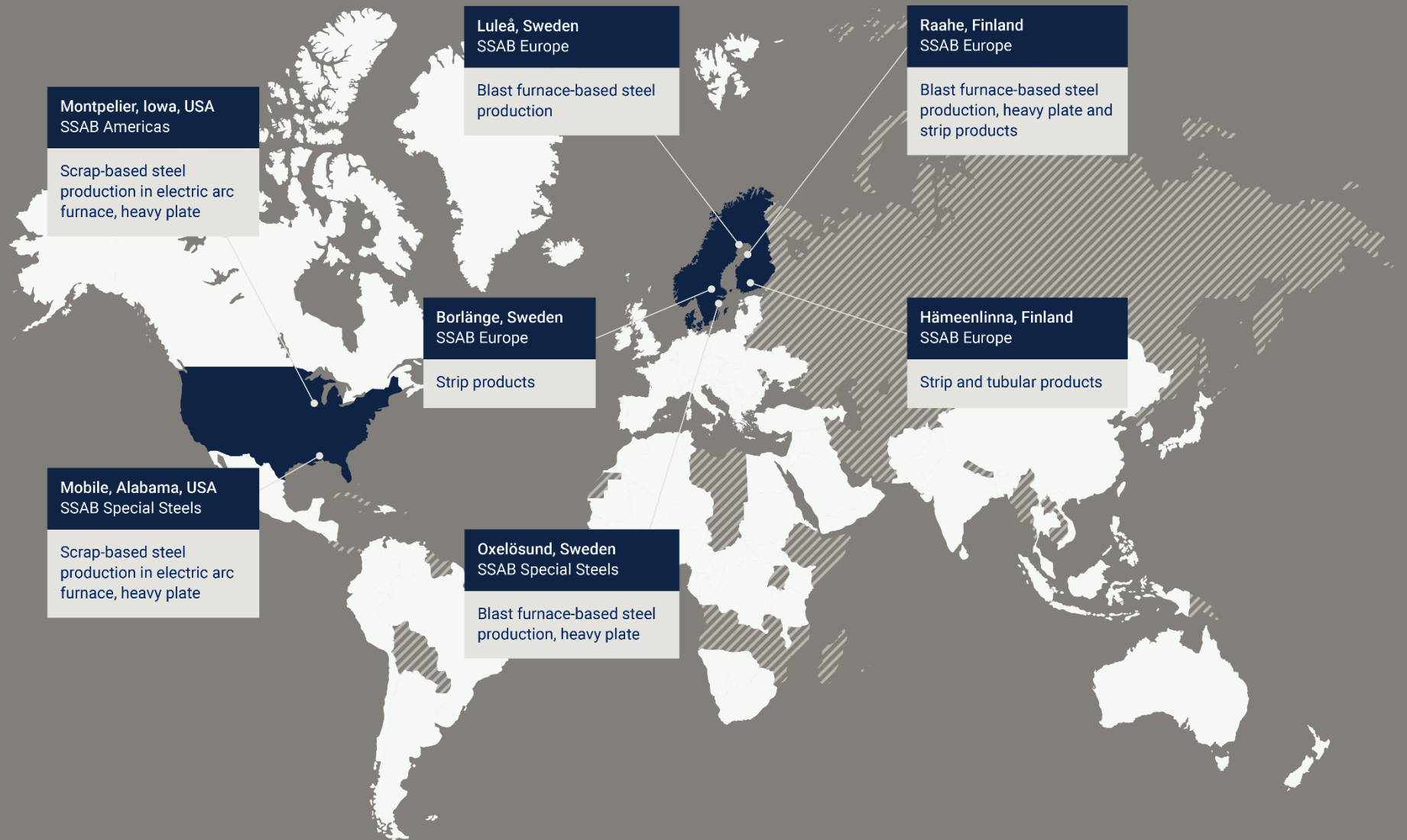


Headquarters  
Stockholm, Sweden

## 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



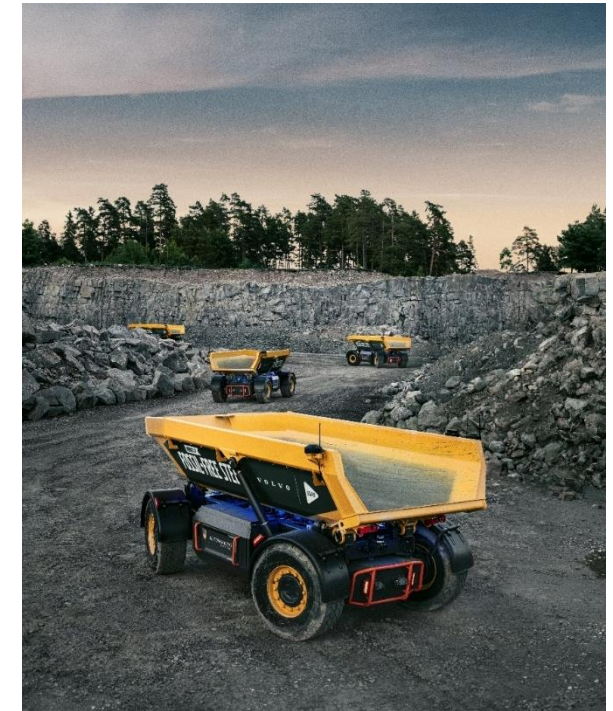
**2017**  
HYBRIT – Joint venture between LKAB, Vattenfall and SSAB formed



**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

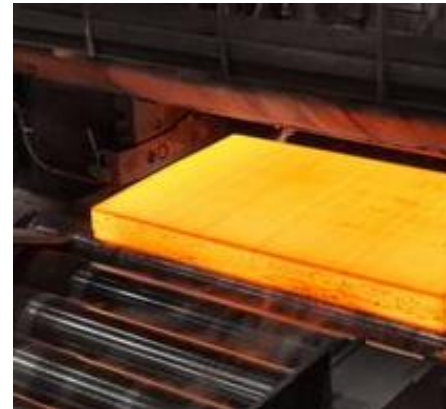
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# Already moving ahead on our transformation journey

SSAB Zero™	EEF in Oxelösund	Mini-mill investment in Luleå	Transformation investment in Raahе
<ul style="list-style-type: none"><li>- Produce SSAB Zero™ in Iowa, USA with finishing in USA, Sweden and Finland</li><li>- Fossil-free pilot shipments continue</li></ul>	<ul style="list-style-type: none"><li>- Replace current blast furnaces and coke plant in Oxelösund</li><li>- Melt recycled steel and fossil-free sponge iron also in Europe</li><li>- Decrease of CO<sub>2</sub> emissions corresponding to approximately 3% of Sweden's carbon emissions</li></ul>	<ul style="list-style-type: none"><li>- First mini-mill operational, in Luleå Sweden</li><li>- Close current coal based system</li><li>- Decrease of CO<sub>2</sub> emissions corresponding to approximately 10 % of Sweden's carbon emissions</li></ul>	<ul style="list-style-type: none"><li>- Second transformation investment, in Raahе Finland</li><li>- Close current coal based system</li><li>- Decrease of CO<sub>2</sub> emissions corresponding to approximately 7% of Finland's carbon emissions</li></ul>
100-200 ktonnes CO <sub>2</sub> saved per year	~1.5 million tonnes CO <sub>2</sub> saved per year Start-up 2026	~4 million tonnes CO <sub>2</sub> saved per year Start-up 2029	~4 million tonnes CO <sub>2</sub> 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 CO<sub>2</sub> 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.

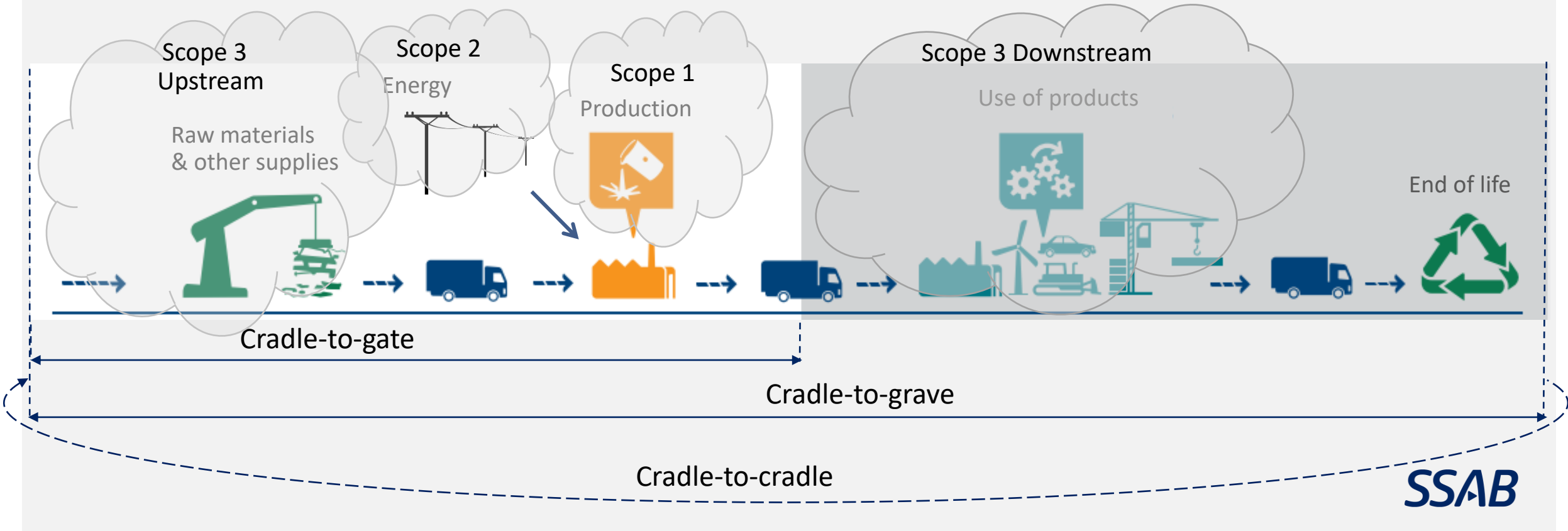
# What is Life Cycle Assessment (LCA) and Carbon Footprint?

## ► 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 <sub>2</sub> equiv.	2.16E+03	2.49E+00	7.44E-01	-1.48E+03
Eutrophication potential (EP)	kg (PO <sub>4</sub> ) <sup>3-</sup> equiv.	4.16E-01	4.22E-03	5.00E-04	-2.17E-01
Acidification potential (AP)	kg SO <sub>2</sub> 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<sub>2</sub> emission:  
 $2.16 - 1.48 = 0.68$  ton CO<sub>2</sub>/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](http://www.environdec.com) and [www.ssab.com](http://www.ssab.com)
  - Ruukki Construction EPDs are also available for Roofing and Components in the Finnish RTS EPD



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

Certification			General		
Company Level	Site Level	Product Level	Company/Site Level	Product Level	Unspecified
Science Based Target Initiative (SBTi)	Responsible Steel	Responsible Steel	GHG protocol - corporate standard	GHG protocol - product standard	Net zero Industry Tracker
Net Zero Steel Pathway Methodology Project (NZSPMP)	IEA-G7	Arcelor Mittal - Xcarb™ Initiatives	worldsteel- CO2 Data Collection	worldsteel- LCI Data Collection	Leadership Group for Industry Transition (LeadIT)
ACT	WV Stahl –green steel label	Thyssenkrupp - blueminet™ Steel		RMI-Steel Emission Reporting Guidance	MPP-Net Zero Steel Initiatives (NZSI)
AISI-Steel production GHG emissions calculation Methodology Guidelines	CRU-Emission Calculation Tool	Voestalpine - greentec steel		SKF-CO2 emission Calculation Tool	ESTEP-Clean Steel Partnership (CSP)
SteelZero		Tata - Zeremis™ Carbon Lite		ICC Framework for Responsible Environmental Marketing Communications	Green Steel for Europe (GRENSTEEL)
First Mover Coalition (FMC)		Kobe Steel – Kobenable Steel		CATENA-X	TERI-Achieving Green Steel Roadmap to a Net Zero Steel Sector in India
Industrial Deep Decarbonisation Initiatives (IDDI)		Nippon - NSCarbolex™ Neutral			E3G-1.5C steel decarbonising the steel sector in Paris-compatible pathways
Climate Bond Initiative		GSCC-The Steel Climate Standard			WTO-What yards for Net Zero?
SASB Standards GHG Emissions		RE100 (electricity)			RMI-Pursuing Zero Carbon Steel in China
Equator principles (EP)		Buy Clean California Act (BCCA)			Glasgow Breakthrough
Climate Action 100+					RMI-Center for Climate Aligned Finance
Glasgow Financial Alliance for Net Zero					UN Convened net Zero Asset Owner
EcoVadis					

Roadmap	Overview of the current state and possible emission reduction strategies
Collaboration	Exchange development status among the interests. (e.g. interactive database, dialogue )
Demand	Utilizing the coalition purchasing power to create the demand market of near-zero steel.
Tool	Tools or software to facilitate the emission accounting work.
Finance	To develop financing mechanisms to support
Policy	To develop government policy support
Framework	Methodology for GHG emission intensity accounting

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



SSAB

# 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.**

# 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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