

The background of the slide is a photograph of a large, multi-story building under construction. The image shows the intricate steel framework, including vertical columns and horizontal beams, against a clear sky. The lighting is somewhat dim, giving it a moody, industrial feel.

Forming Markets, Forging Futures

Public procurement and lead markets for European low-emission steel

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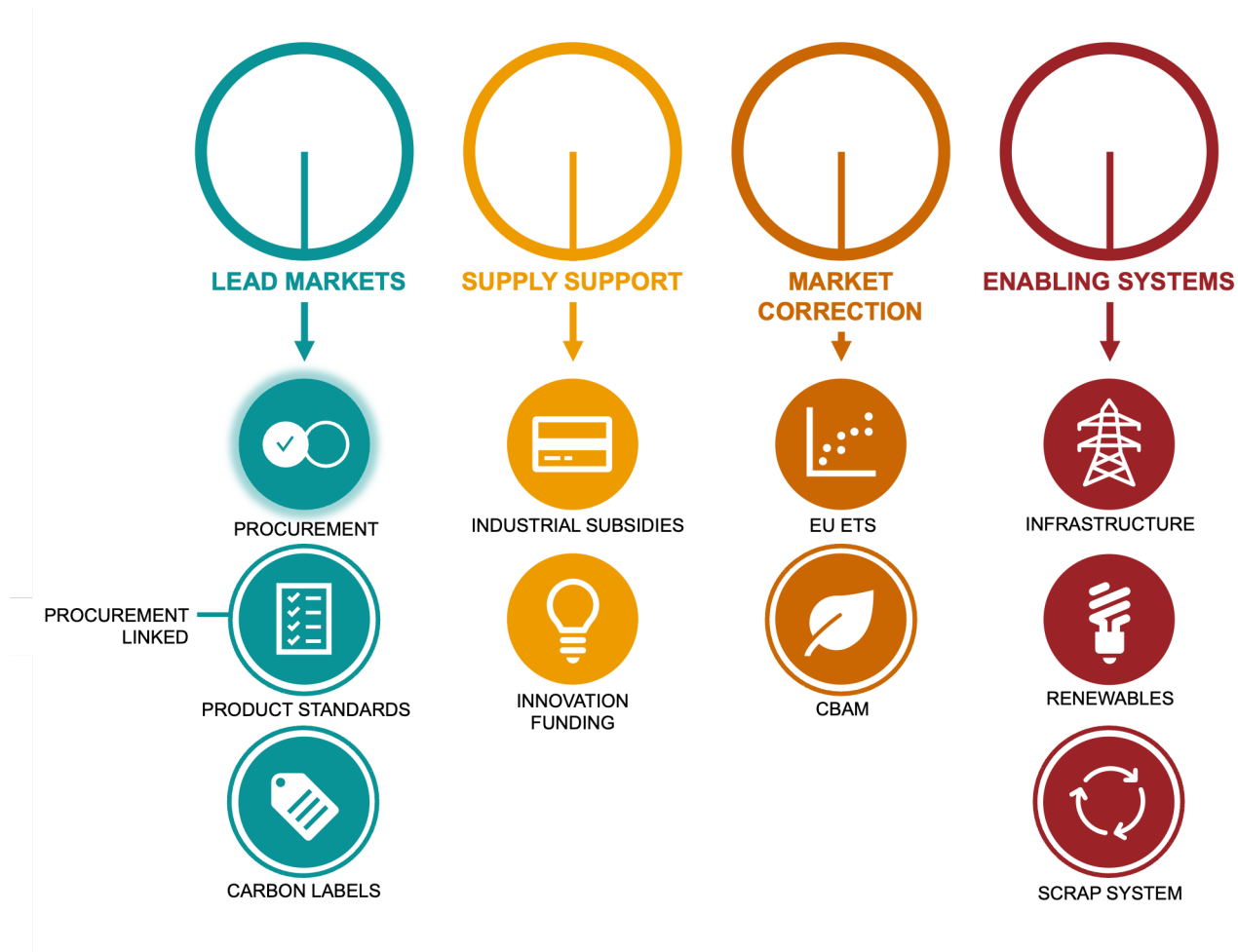
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Low-emission steel: what and why?

- Steel $\approx$ 5% of EU CO₂ emissions
- Critical material in construction, transport + defence
- Multiple technical decarbonisation pathways
- For over a decade public procurement has been flagged as a “sleeping giant” with huge potential to develop lead markets for low-emission steel

But it is a complex policy picture

Low-emission steel: policy levers





How is procurement being used as a
demand-side instrument for steel
decarbonisation?

Research Framework

Signaller-messenger-implementer chain

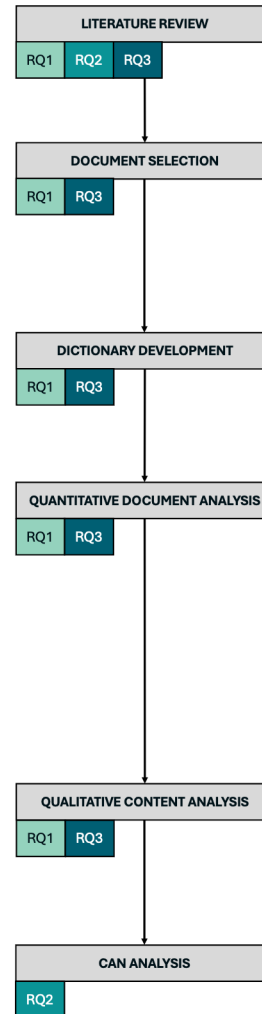
- the EU as policy *signaller*
- Member States as policy *messengers*
- and public buyers as *implementers*

The effectiveness of procurement depends on what happens across **all** three levels.

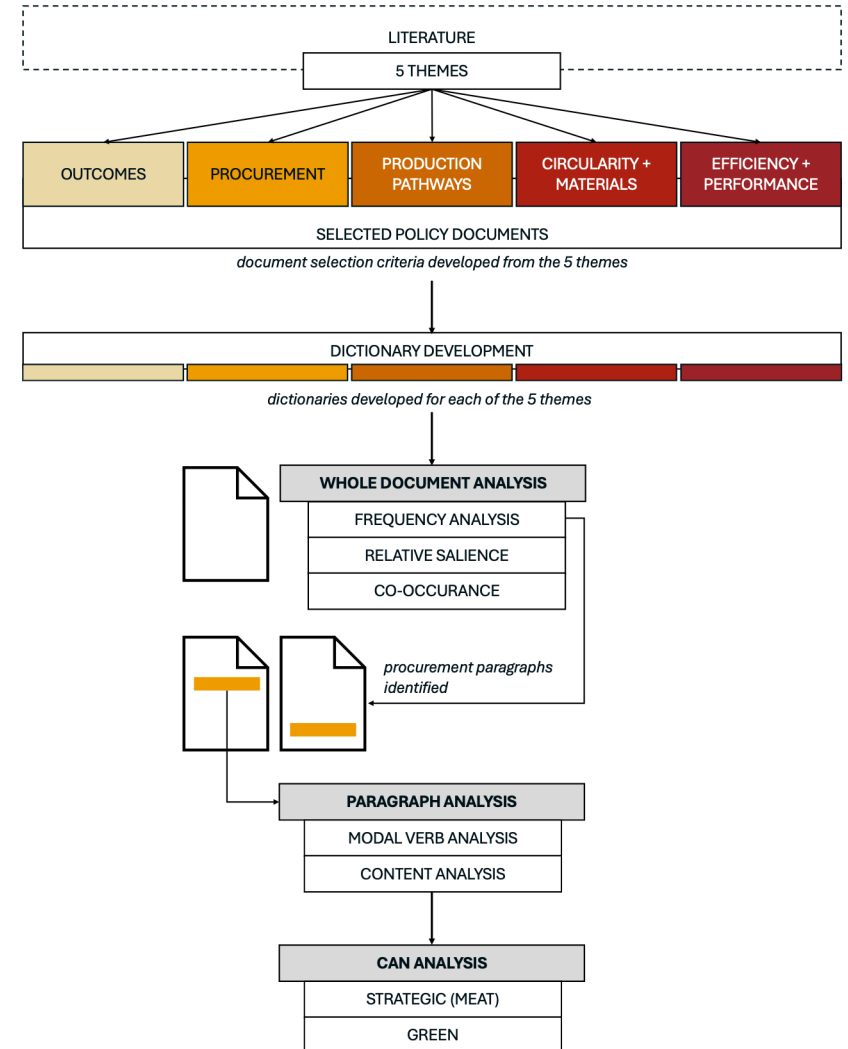
Methods

See paper for detail

METHODOLOGICAL SEQUENCE



METHODOLOGY



Methods

Document thematic category	Included documents
Industrial decarbonisation and steel transition	- Carbon Border Adjustment Mechanism (CBAM, 2023) - Net-Zero Industry Act (2024) - Industrial Emissions Directive (2024) - Research Fund for Coal and Steel (RFCS) – Programme information package (2024) - Steel and Metals Action Plan (SMAP, 2025) - Defining low-carbon emissions steel: A comparative analysis of international initiatives and standards (2025) - EU Innovation Fund (2020)
Procurement governance and lead markets	- EU Public Procurement Directives (2014) - Directive 2009/33/EC on clean and energy-efficient road transport vehicles (2024) - Clean Industrial Deal (2025)
Strategic industrial policy and competitiveness	- Green Deal Industrial Plan (2023) - Critical Raw Materials Act (2024) - Draghi Report on EU Competitiveness (2025) - White Paper on Defence (2025)
Energy systems and production pathways	- European Hydrogen Strategy (2020) - European Hydrogen Bank (2023) - Action Plan for Affordable Energy (2025)
Circularity and downstream demand sectors	- Circular Economy Action Plan (2020) - Waste Shipment Regulation (2024) - Construction Products Regulation (CPR, 2024) - EU Sustainable and Smart Mobility Strategy (2020) - Automotive Action Plan (2025)

- 1. Macro-level policy outcomes** (e.g. “decarbon*”, “competitiveness”, “resilien*”, “security”, “strategic autonomy”)
- 2. Procurement mechanisms** (e.g. “public procurement”, “MEAT”, “award criteria”, “lifecycle costing”)
- 3. Production pathways** (e.g. “hydrogen”, “electrification”, “direct reduced iron”, “carbon capture”)
- 4. Circularity and material efficiency** (e.g. “circular*”, “recycl*”, “scrap”, “reuse”)
- 5. Efficiency and industrial performance** (e.g. “energy efficiency”, “resource efficiency”, “best available techniques”)

Methods

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10 ### CREATING POLICY DICTIONARY
11 ## Five categories: macro_outcomes, production_pathways, circularity_materials, efficiency, procurement_mechanisms
12 policy_dictionary <- list(
13   macro_outcomes = c(
14     "decarbon*", "carbon intens*", "climate neutral*", "net zero", "carbon neutral*",
15     "emission reduction*", "greenhouse gas", "ghg reduction*", "co2 reduction*",
16     "climate mitigation", "climate resilient*", "strategic autonom*", "resilient*",
17     "competitiveness", "industrial competit*", "energy security", "security",
18     "supply security", "strategic dependenc*", "strategic value"
19   ),
20
21   production_pathways = c(
22     "hydrogen", "green hydrogen", "renewable hydrogen",
23     "electrolysis", "direct reduced iron", "direct reduction",
24     "dri", "h2 dri", "electric arc furnace", "eaf",
25     "renewable electricity", "renewable energy",
26     "fossil free steel", "low carbon steel", "green steel",
27     "near zero steel", "clean steel", "sustainable steel",
28     "industrial electrification", "carbon capture", "ccs", "ccu", "zero-carbon steel"
29   ),
30
31   circularity_materials = c(
32     "circular*", "recycl*", "scrap", "secondary steel",
33     "material efficiency", "resource efficiency",
34     "life cycle", "lifecycle", "life cycle assessment", "lca",
35     "embodied carbon", "embodied emissions",
36     "product carbon footprint", "pcf",
37     "environmental product declaration", "epd",
38     "durabil*", "reuse", "remanufact*"
39   ),
40
41   efficiency = c(
42     "energy efficiency", "energy efficient",
43     "process efficiency",
44     "efficiency improvement*", "energy intensity",
45     "best available technique*", "bat"
46   ),
47
48   procurement_mechanisms = c(
49     "public procurement", "green public procurement", "gpp",
50     "strategic procurement", "sustainable procurement",
51     "most economically advantageous tender", "meat",
52     "award criteria", "award criterion", "tender",
53     "contracting authority*",
54     "life cycle costing", "lcc",
55     "total cost of ownership", "tco",
56     "technical specification*", "minimum requirement*",
57     "contract performance clause*",
58     "environmental criteria", "lead market*", "procurement criteria", "procurement", "joint procurement"
59   )
60 )

```

Test	Purpose
Frequency	→ What topics are discussed most?
Relative Salience	→ What topics are emphasised most?
Co-occurrence	→ What topics are linked together?

Finding 1: Strategic framing

Procurement is being tasked with many agendas by the EU:

- Decarbonisation
- Competitiveness
- Resilience
- Strategic autonomy



Finding 2: National translation differs

Countries interpret EU signals differently

Member States are not passive recipients of EU policy.



Germany

Production pathways, Hydrogen, Industrial competitiveness



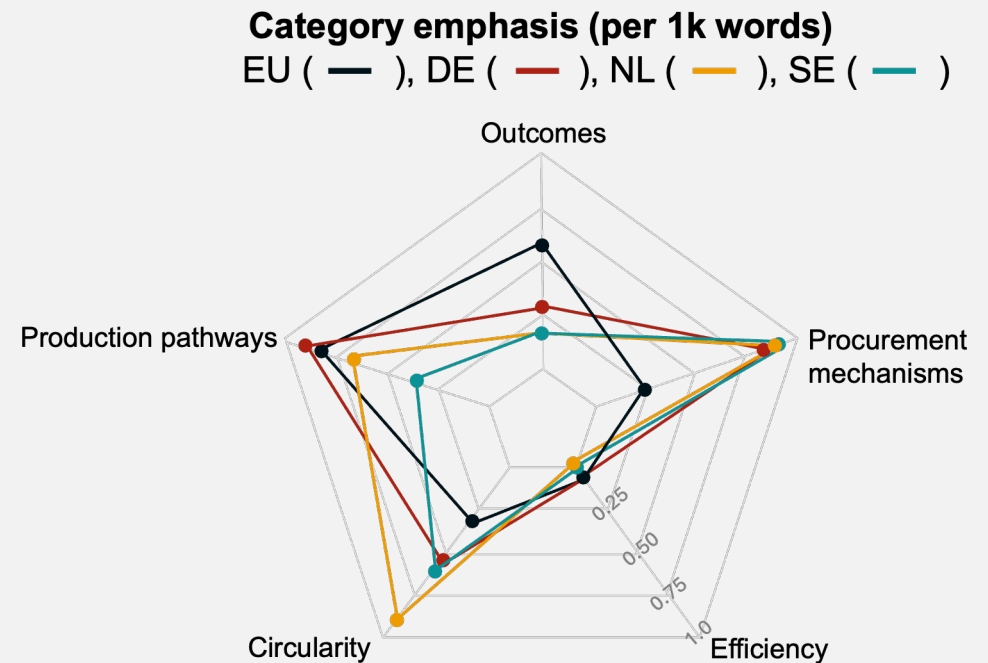
Sweden

Less focused on production pathways



Netherlands

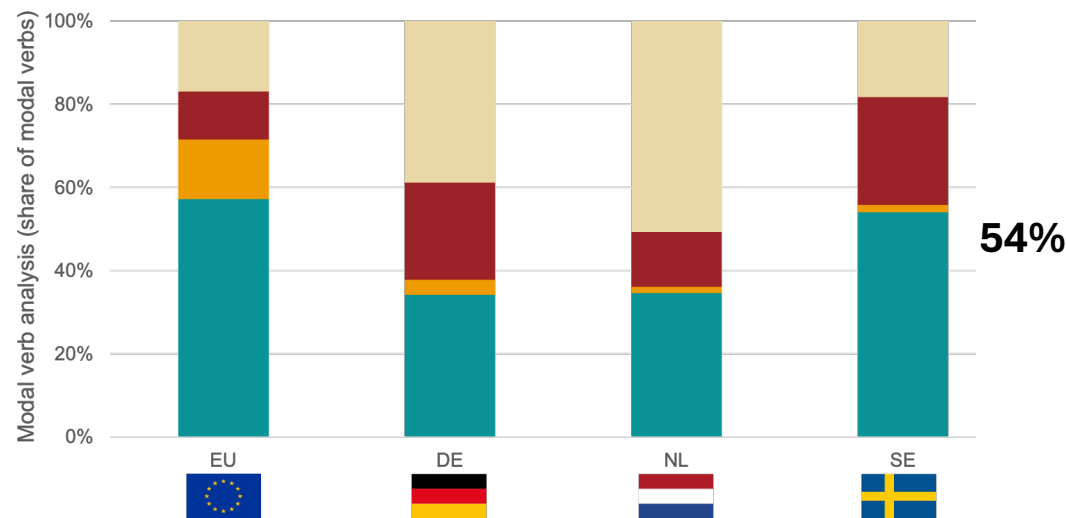
Focus on circularity and operational guidance



Finding 2: National translation differs

Signal	Terms
High binding	"shall", "must", "require*", "oblig*", "mandat*", "is required to", "are required to", "shall ensure", "must ensure", "shall establish", "shall adopt", "shall not", "must not", "may not", "cannot", "can't", "not allow*"
Medium binding	"should", "recommend*", "expect*"
Low binding	"may", "can", "encourage*", "support*", "promote*", "facilitat*"
None/unclear	A residual class: procurement paragraphs that do not contain any of the above three modal dictionary matches

BUT... do actions follow words?



- None/unclear
- Low (aspirational/enablement)
- Medium (soft obligation)
- High (binding)

Finding 3: Buyer-level reality

Are buyers actually using strategic or green procurement?

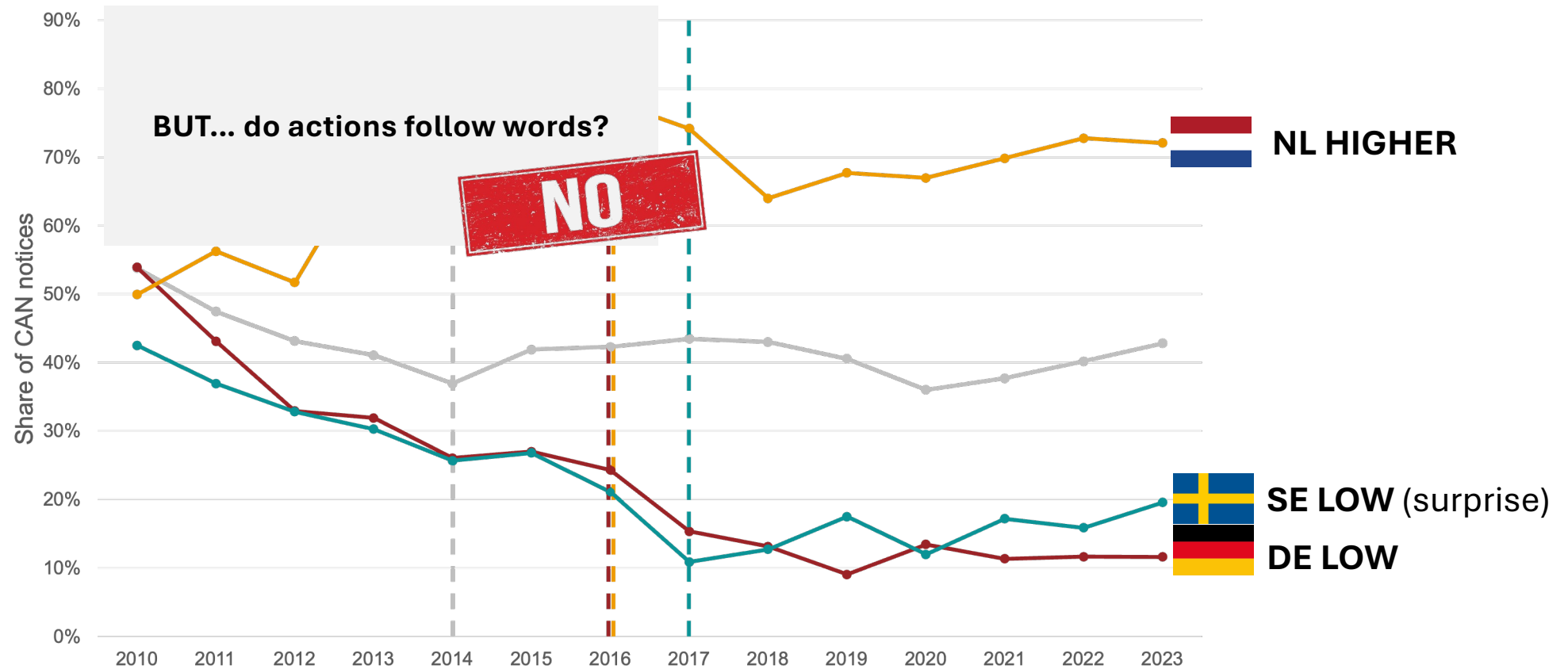


Example	ISO_COUNTRY_CODE	CRIT_CODE	CRIT_CRITERIA	CRIT_WEIGHTS
1	SE	L	-	-
2	SE	M	Pris Referenser (Price References)	75 25
3	SE	M	Pris Miljö Personal (Price Environment Staff)	60 15 15

Finding 3: Buyer-level reality



Prevalence of MEAT procurement in steel-relevant sectors



Finding 3: Buyer-level reality (green)

Green criteria remain limited

- Across steel-relevant sectors:
- Often only **0–3%** of notices
- Netherlands (transport sector) performs better (**7–11%**)
- Overall uptake remains low

Lead-market **ambitions exceed current implementation reality.**

Finding 4: The Dutch difference

Netherlands stands out because of implementation support

- PIANOo
- DuboCalc
- National Environmental Database
- CO₂ Performance Ladder

Key insight: Success appears linked less to policy ambition and more to:

- Tools
- Guidance
- Institutional capacity
- Procurement expertise



The bottleneck

Not primarily a policy ambition problem

The bottleneck is:

- Governance translation
- Institutional capacity
- Standards and methodologies
- Buyer support



Conclusions

- **Procurement is increasingly being framed as industrial policy.**
It is about buying sustainably, creating markets for low-emission steel, strengthening competitiveness, and supporting industrial resilience.
- **The main challenge is not ambition, but implementation.**
EU signals are strong, but they are translated unevenly by Member States and operationalised inconsistently by buyers.
- **Institutional capacity matters more than policy rhetoric.**
The Dutch case suggests that tools, guidance, standards and procurement support ecosystems may be more important than simply strengthening policy language.

Recommendations

1.

Develop harmonised standards and definitions for low-emission steel

2.

Shift attention from policy signalling towards implementation infrastructure

3.

Treat procurement as part of a wider lead-market ecosystem alongside CBAM, industrial policy and standards

4.

Invest in buyer-support systems, LCA tools and procurement guidance

Discussion & Questions

Where should we go next?

Look further into the procurements

Understand buyer needs/perspectives

Detailed case studies



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Thank you



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