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Managing market and regulatory uncertainty in steel producers' decarbonization strategies: a European perspective

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Introduction

Research scope and design

The path

Research scope and design

Research design

Scope:	• ESG - EU-ETS
Sector:	• Steel production
Research method:	• case study (multiple)
Perimeter:	• European (multinational: Italy and Germany)
Focus:	• decarbonization strategy to 2030
Problem definition.	• Regulatory and market risks

The path

April 2022

Definition of sustainability committee
- Environment / enrgy
- Social
- Governance

16 meeting

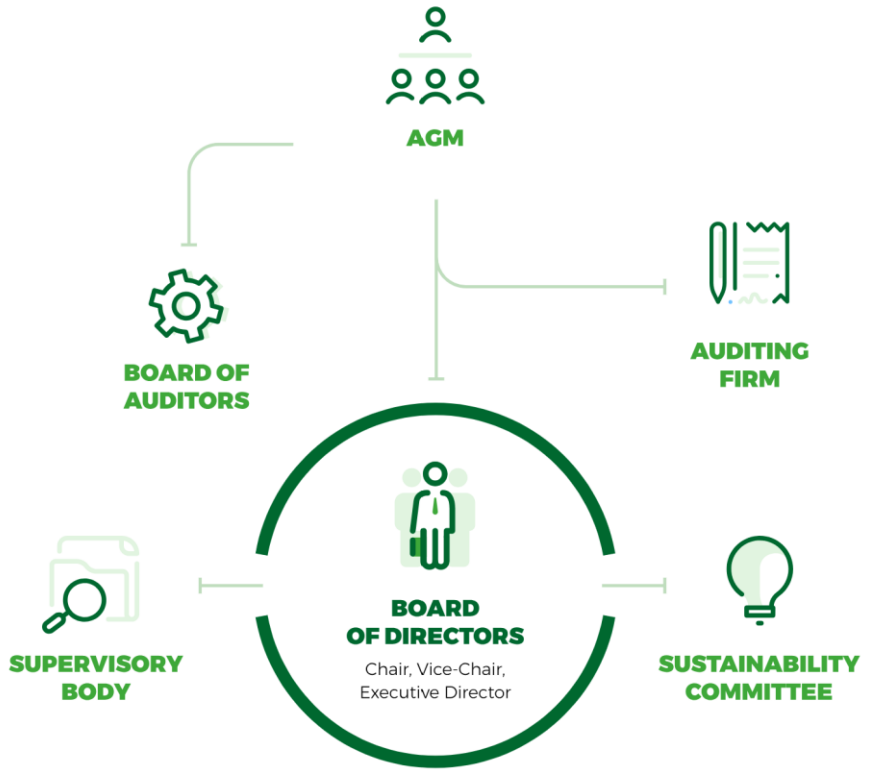
Complementary research

Global cleaner production conference

We are here ☺:
- preliminary analysis of regulatory and market risks

Next steps

Sensitivity analysis on risks related to decarbonization strategy



Reason why market background

Reason why

Marked background

Reason why

- Companies that integrate sustainability into every aspect of corporate governance and management have significantly higher ESG performance than other companies and the national average'

To improve performance

- European regulations are extending reporting requirements on specific information that can only be collected by setting up a new sustainability process and governance

To be compliant with European regulations (taxonomy).

- Consistent and comprehensive corporate reporting requires an integrated path in terms of analysis, vision, strategy, and management.

To report in an integrated way

- It will be (it is) increasingly important to have comparable and measurable KPIs: so they must be identified, monitored and published

To respond to the demands of the financial market

- (and market premium)

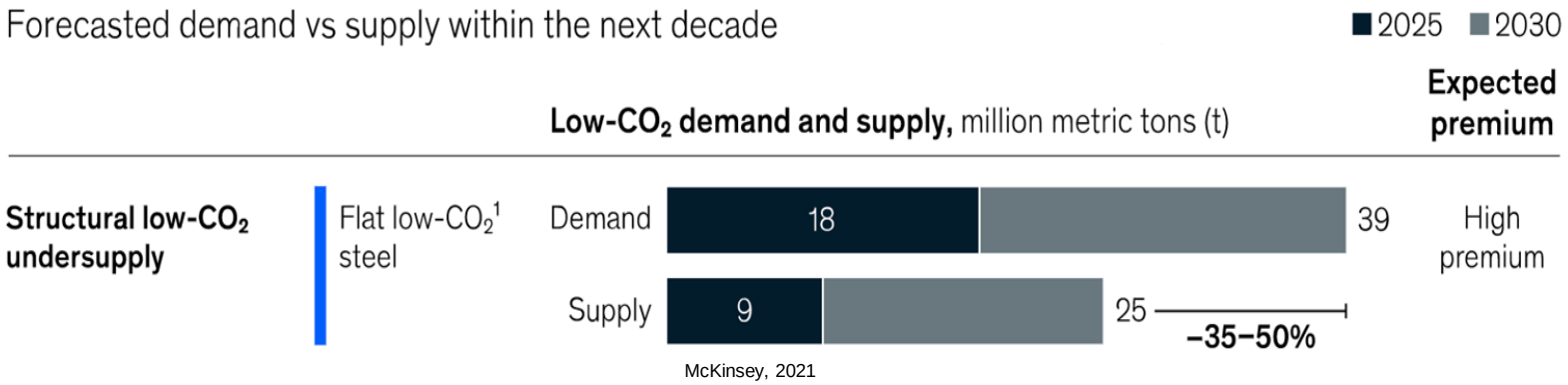
To respond to customer demands

The current market and future projections

The demand for **steel with low greenhouse gas emissions** is increasing. End customers (automotive and construction) require it to respond to requests for more sustainable and circular products.

Expected premiums: still for a niche market, but will become the norm in the next 3-10 years

European Supply and Demand for low-carbon flat products by 2025 and 2030



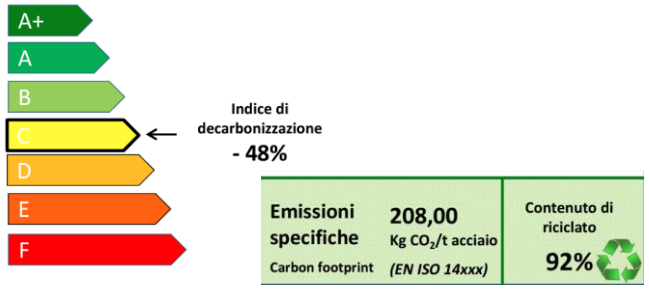
McKinsey, 2021

Highly variable (and difficult) to predict premiums currently between 15-55 €/t

The 3 positions on the definition of Green Steel

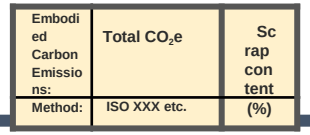
Italy

- Green steel label similar to EU energy label
- Two distinct baseline (level E) threshold values:
  - BF-BOF: **2 tCO_2eq/t**
  - EAF: **0.4 tCO_2eq/t**
- Single value for net-zero threshold (level A+): **0.05 tCO_2eq/t**



Germany

- Calibrated on BF-BOF
- Variable baseline and net-zero thresholds based on the % of scrap used
- Baseline threshold (E):
  - **From 2,5 to 0,87 tCO_2eq/t**
- Net-zero threshold (A):
  - **From 0,5 to 0,3 tCO_2eq/t**



GSCC Global Steel Climate Council

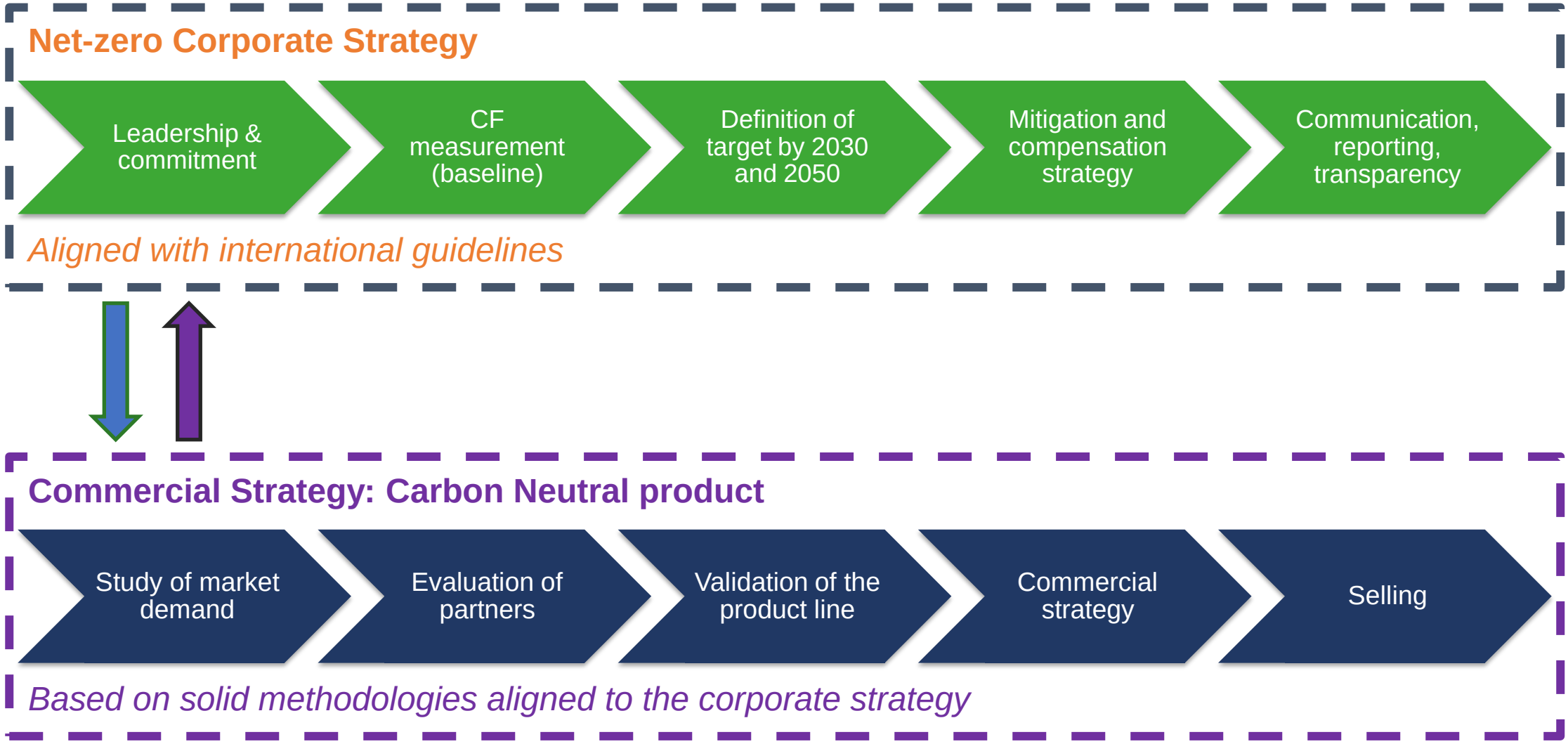
- Focused on impact, independent of the technology used to make it
- Lower and lower limits over time (Scope 1,2,3)
- Members & Supporters: Arvedi, Beltrame, Pittini, Riva

Purpose

Strategy and commercialization

Managing uncertainty

From corporate strategy to commercial strategy



Managing uncertainty

Even if a *typical strategy can be like this…*

INTERNAL DRIVERS

- Consistency with the corporate decarbonization strategy
- Enhancement of investments to reduce direct emissions
- Alignment with international guidelines and European taxonomy
- Scientific solidity – certificates on emissions actually avoided
- ISO 14067 standard (product carbon footprint) with certified algorithms

EXTERNAL DRIVERS

- Requests from the construction and automotive market
- Aligned with strategies of international players (ArcelorMittal, Tata, Thyssen, etc.)
- International partner
- Market and regulatory uncertainty

Results and conclusion

The plan: strategic KPIs

Risks and impact on plan

The plan: Identified KPIs

CO_2 Emissions (Scope 1 and Scope 2) - tCO2/t

Energy intensity GJ/t

RES- %

Specific waste production- Kg/t

Residuals entered in Circular Processes - %

Circular flow - %

Water consumption- m3/t

Main risks associated with the Strategy (I)

	Initiative	Risk	Type	Prevention Actions	Impact Mitigation
A	**Self-production**	Delayed pipeline identification (wind)	**Execution**	• Contact different developers	• Increasing PPA volumes
B	**Use of Green Fuels (biomethane)**	Sourcing difficulties of biomethane	**Market**	• Evaluate alternative options	• Buy long contracts term with multiple suppliers
C	**Use of Green Fuels (hydrogen)**	Impacts on process/interaction with other materials	**Technical**	• Gather information on the testing of other European players	• Establish production plan that considers potential delays
D	**Self-production**	Increased plant development costs	**Market**	• Identify plants to be developed first • Insertion of contract clauses	• Evaluate a potential strategy switch by increasing the PPA/GdO portfolio
E	**Use of Green Fuels (hydrogen)**	Delay in the development of H2 supplies	**Market**	• Contractual leverage with suppliers and obtain government support	• Evaluate use of other green-fuels
F	**Decarbonization of the energy mix**	Delay Decarbonization of the country's energy mix	**Regulatory**	• Continuously monitor the country's level of carbon intensity	• Purchasing PPAs and GOs in the event of lower decarbonization of the energy mix
G	**Self-production**	Long bureaucratic delays for authorization to build	**Regulatory**	• Initiate permitting process well in advance of project timelines	• Purchase PPA and GdO in case of delay

Legend: Scope 1 Scope 2

Main risks associated with the Strategy (II)

	Initiative	Risk	Impacts	Prevention Actions	Impact Mitigation
H	**PPA/OG purchase: using Green Fuels**	Shortage of quantity and higher than expected prices	**More costs**	• Have a broad portfolio of suppliers • Offtake/ long agreements term	• Use indexed structures (PPA) • Increase buy PPA/GdO (vs. Green Fuels)
I	**PPA/OG Purchasing**	Decrease in wholesale prices	**Lower revenues**	• Choose flexible PPA structures (cap & floor, indexed)	• Define a hedging process that also takes into account the price of steel
L	**Use of Green Fuels (biomethane)**	Delayed permitting/standards on GdO for biomethane.	**Delays with respect to at floor**	• Lobbying through consortium for standards to meet timelines	• Purchase PPA/GdO in case of regulatory delay
M	**Self-production**	Timing for plant-grid connes- sion by Terna/ Enel.	**Delays to the plan**	• Negotiating penalties for delays on the connection	• Purchase PPA/GdO in case of plant delay
N	**Self-production**	Delay in connecting the regional grid to the national grid (e.g., Sardinia)	**Delays to plan / lower revenues**	• Monitor progress and lobby for the linkage project to move forward	• Reduce speed of development/size of plant, moving toward other project
O	**Self-production**	Delay in plant construction time	**Delays to the plan**	• Inserting penalties into contracts • Continuously monitor the development	• Purchase PPA/GdO in case of plant delay
P	**PPA/OG Purchasing**	Lack of expertise in PPA and GDO purchasing.	**Delays to the plan**	• Hiring specialized resources • Start the purchasing process well in advance	• Evaluate external support until skills are acquired

Legend: Scope 1 Scope 2

Thank you