

1.5°C SCIENCE BASED TARGET SETTING IN THE STEEL SECTOR

PUBLIC CONSULTATION WEBINAR

23 November 2022

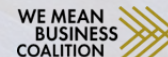
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VIDEO-CONFERENCE GUIDELINES

- This is a **zoom webinar**. Your camera and microphone are automatically muted
- Participants can **send questions via the Q&A button**
- **Slides from this webinar will be shared** after this call
- Please note that this webinar will be **recorded** for the benefit of those who cannot attend



AGENDA

1. **Welcome and introduction - Amelie Tan / Paulina Tarrant**
2. Introduction to the SBTi and background - Karl Downey
3. Steel criteria and guidance
 - Pathways and system boundary - Rafal Malinowski (ETC)
 - Steel criteria and consultation questions - Karl Downey & Brenda Chan
4. Q&A session

TODAY'S WEBINAR TEAM



KARL DOWNEY
Senior Technical
Manager and industry
lead
SBTi



BRENDA CHAN
Technical Manager, Steel
SBTi



AMELIE TAN
UK & WW Regional
Manager
SBTi
(1st Session)



AAMIR KHAN
Project Officer
SBTi



PAULINA MORENO
Communications Manager
SBTi



PAULINA TARRANT
Net-Zero Engagement
Manager
SBTi
(2nd Session)



RAFAL MALINOWSKI
Project Manager
ETC

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INTRODUCTION TO THE SBTi

What is the Science Based Targets initiative?



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

The Science Based Targets initiative (SBTi) is a **global body** enabling businesses and financial institutions to set **ambitious emissions reductions targets** in line with the **latest climate science**.

Founding Partners



United Nations
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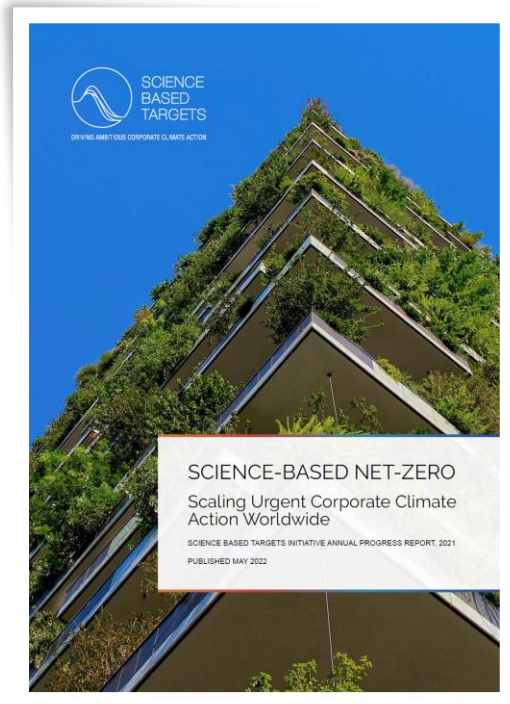
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WE MEAN
BUSINESS
COALITION



INTRODUCTION TO THE SBTi

Progress to date



1,957
with science-
based targets

4,061
companies taking action

1,510
net-zero
commitments

To learn more about the progress of the initiative, consult the [SBTi Progress Report 2021](#)

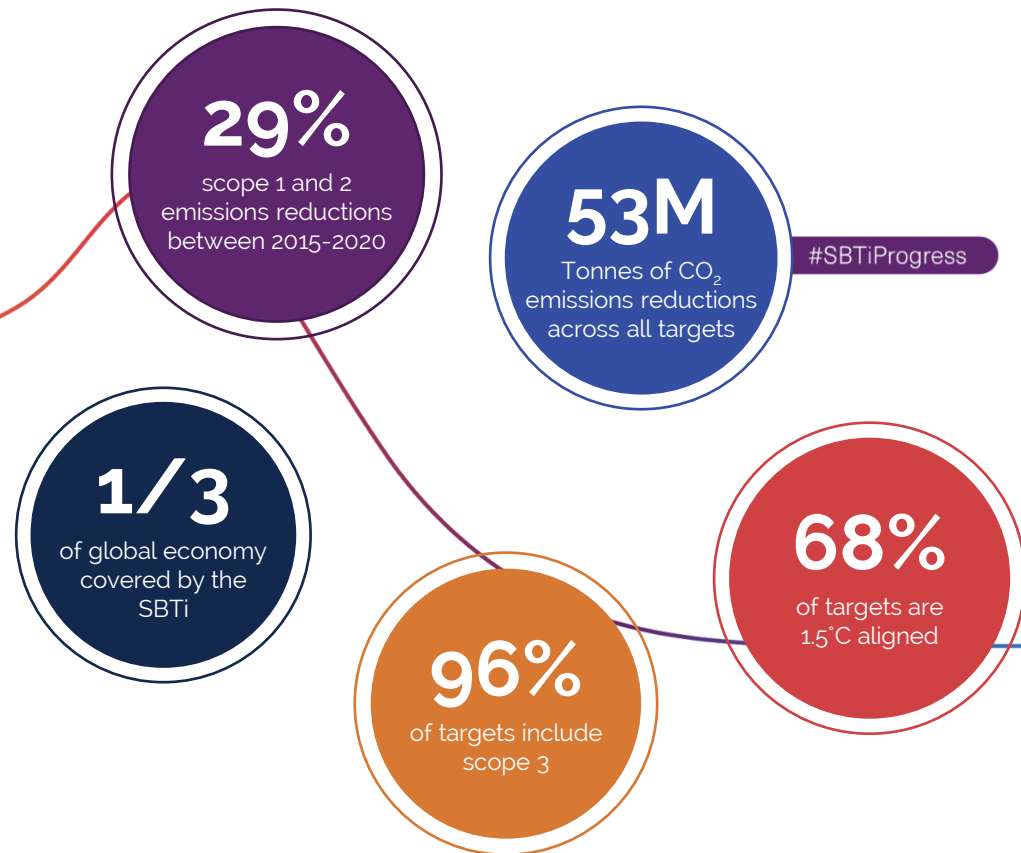
INTRODUCTION TO THE SBTi

Progress to date

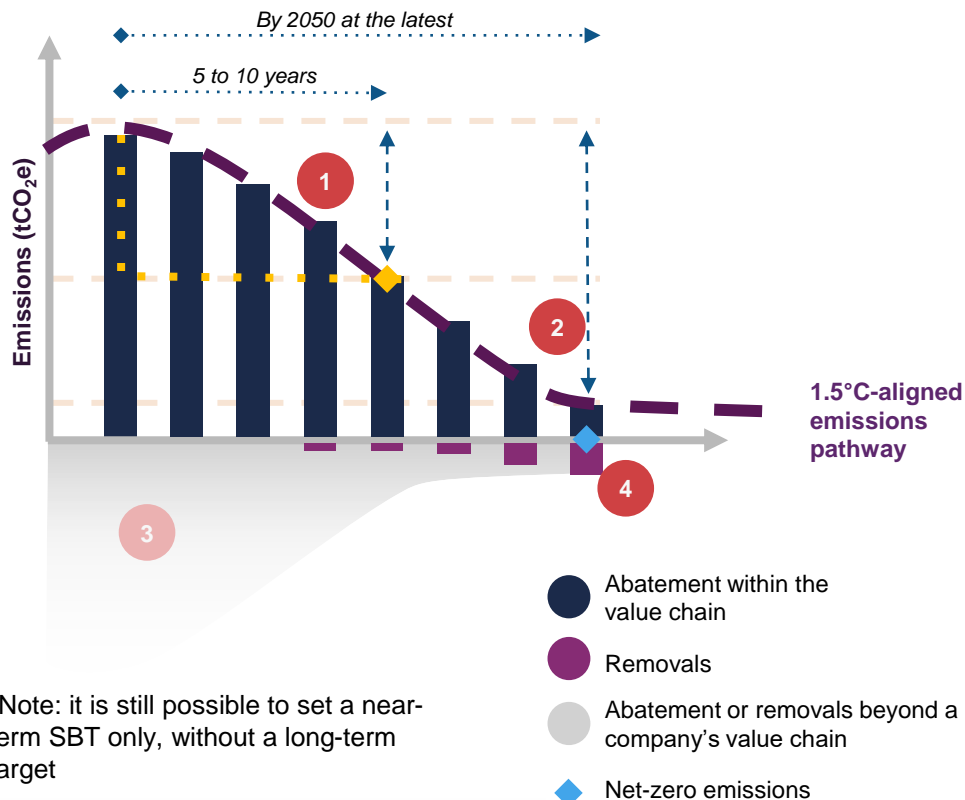
Companies with science-based targets are delivering emissions reductions at scale

- Reduced emissions by **29%** between **2015-2020**.
- **1.5B tonnes of annual CO₂e** emissions covered by the SBTi.
- **\$38trn** of global market capitalization.
- **70** countries and **15** industries.

Source: [SBTi Progress Report 2021](#).



THE NET-ZERO STANDARD FRAMEWORK



*Note: it is still possible to set a near-term SBT only, without a long-term target

Steel Public consultation webinar - 23 November 2022

1 To set near-term science-based targets:
5-10 year emission reduction targets in line with 1.5°C pathways*

2 To set long-term science-based targets:
Target to reduce emissions to a residual level in line with 1.5°C scenarios by no later than 2050

Beyond value chain mitigation:
In the transition to net-zero, companies should take action to mitigate emissions beyond their value chains. For example, purchasing high-quality, jurisdictional REDD+ credits or investing in direct air capture (DAC) and geologic storage

4 Neutralization of residual emissions:
GHGs released into the atmosphere when the company has achieved their long-term SBT must be counterbalanced through the permanent removal and storage of carbon from the atmosphere



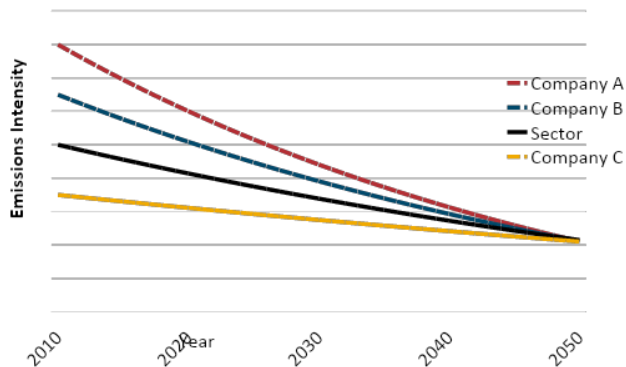
Required



Recommended

TARGET-SETTING APPROACHES

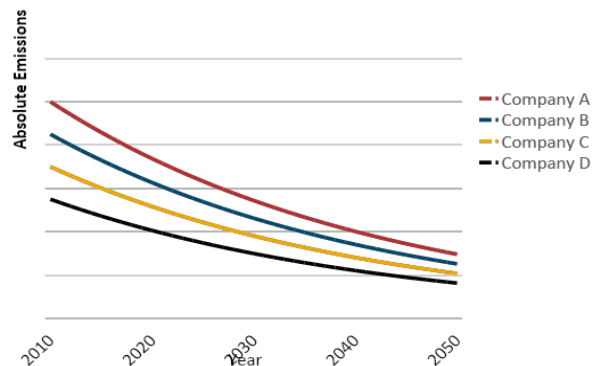
Carbon intensity convergence / Sectoral Decarbonisation Approach (SDA)



Homogeneous sectors:

- Power
- Cement
- **Iron & Steel**
- Transport (some sectors)
- Buildings

Carbon emissions contraction



Heterogeneous sectors:

- Other industry

Note: an absolute contraction pathway for 1.5°C has already been derived by the SBTi and requires a minimum 4.2% linear annual reduction or a 42% reduction over 2020-2030, whichever is higher.

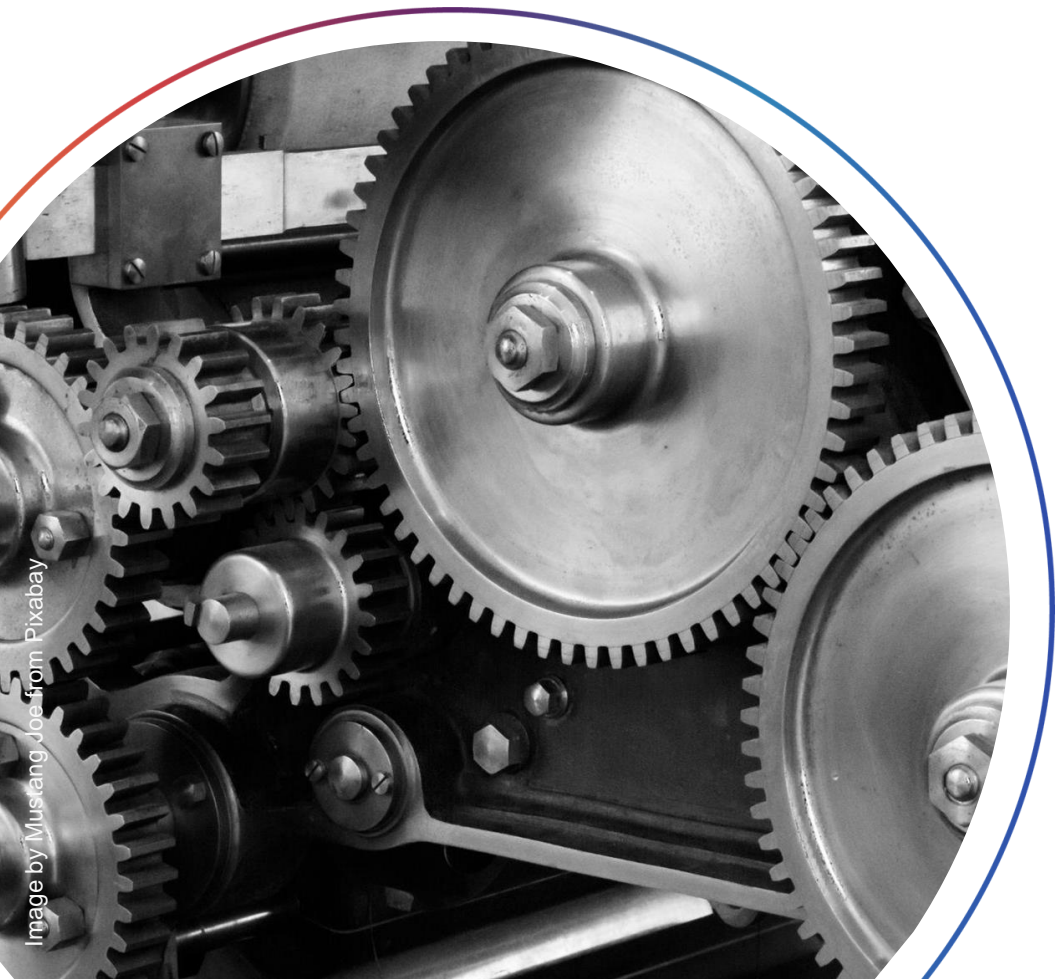


Image by Mustang Joe from Pixabay



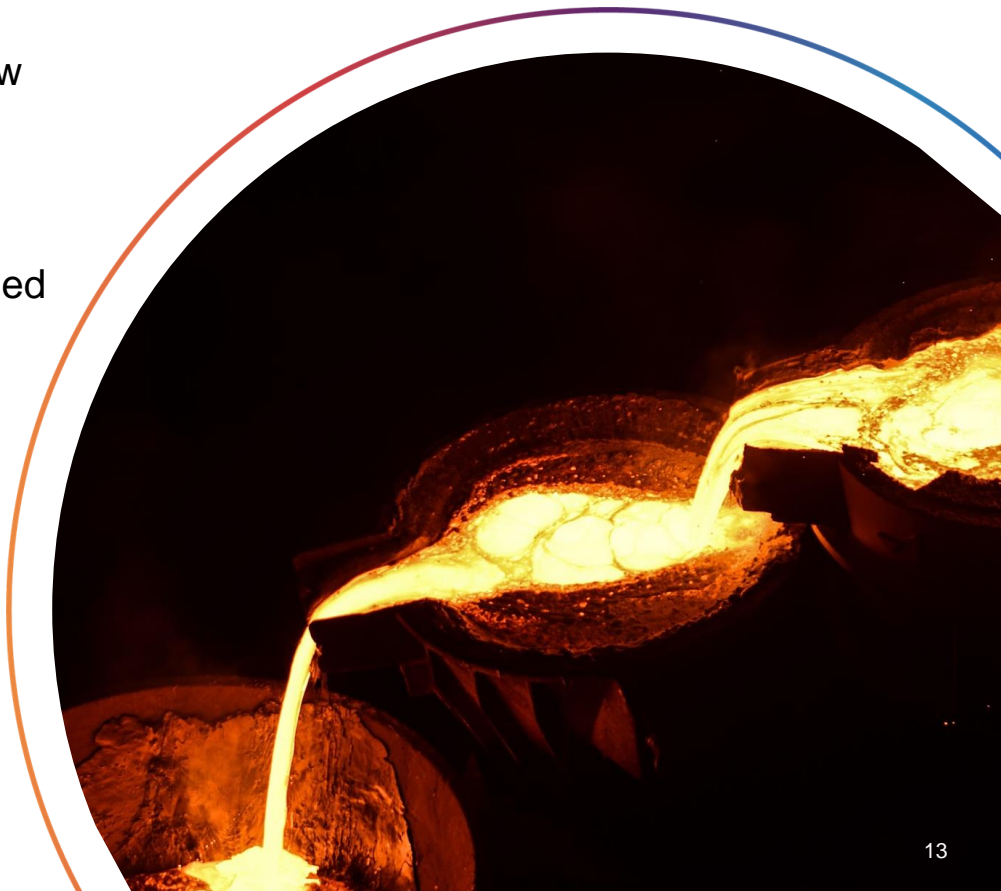
On 15 September 2022, the SBTi and Mission Possible Partnership announced a technical collaboration



THE SBTi STEEL PROJECT

SBTi STEEL PROJECT

- Steel companies can already set well-below 2°C-aligned targets using the SBTi tools
- SBTi has launched this project to provide resources for companies to set 1.5°C-aligned targets:
 - 1.5°C pathway
 - Detailed target-setting rules
 - Near and long term targets
- Project [timeframe](#):
Oct 2021 - April/May 2023



STEEL PROJECT - EXPERT ADVISORY GROUP

Aceros AZA S.A.	Nippon Steel Corporation
Aperam	Outokumpu Oyi
ArcelorMittal	POSCO
Baoshan Iron & Steel Co Ltd (Baosteel)	Potsdam Institute for Climate Impact Research
Bellona	ResponsibleSteel
BlueScope Steel Limited	Rocky Mountain Institute (RMI)
Cleveland-Cliffs Inc.	Severstal PAO
E3G	Tata Steel
Energy Transitions Commission (ETC)	Transition Pathway Initiative
Environmental Coalition on Standards (ECOS)	Vallourec
Gerdau	Voestalpine AG
Imperial College	World Steel Association
JSW Steel Ltd	WWF (Finland)
Liberty Steel	

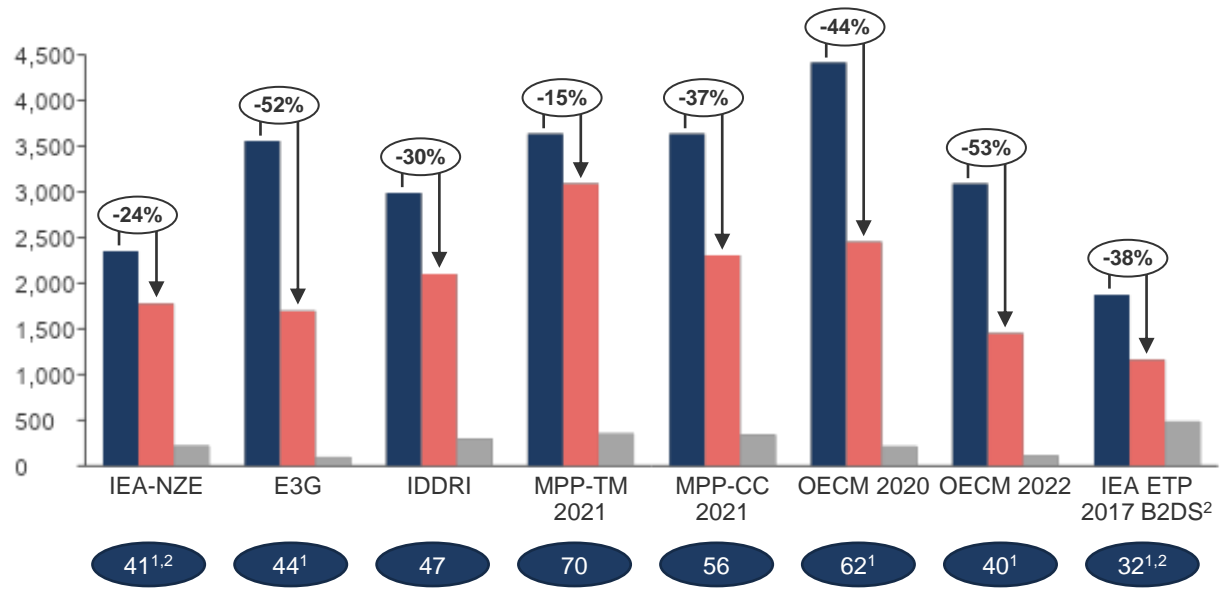
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Multiple pathways were reviewed in order to provide ambitious, yet realistic basis for target-setting

Annual iron & steel sector emissions
MtCO₂

○ Cumulative 2020-50 emissions [GtCO₂] ■ 2020 ■ 2030 ■ 2050



- 2020 values vary significantly which is driven mainly by differences in emission system boundaries
- Pathways exhibit large differences when it comes to projected ambition level, especially by 2030, which is impacted by assumptions on technology availability and model optimization logic
- Total budget and emission trajectory are crucial inputs into SBTi target-setting methodology



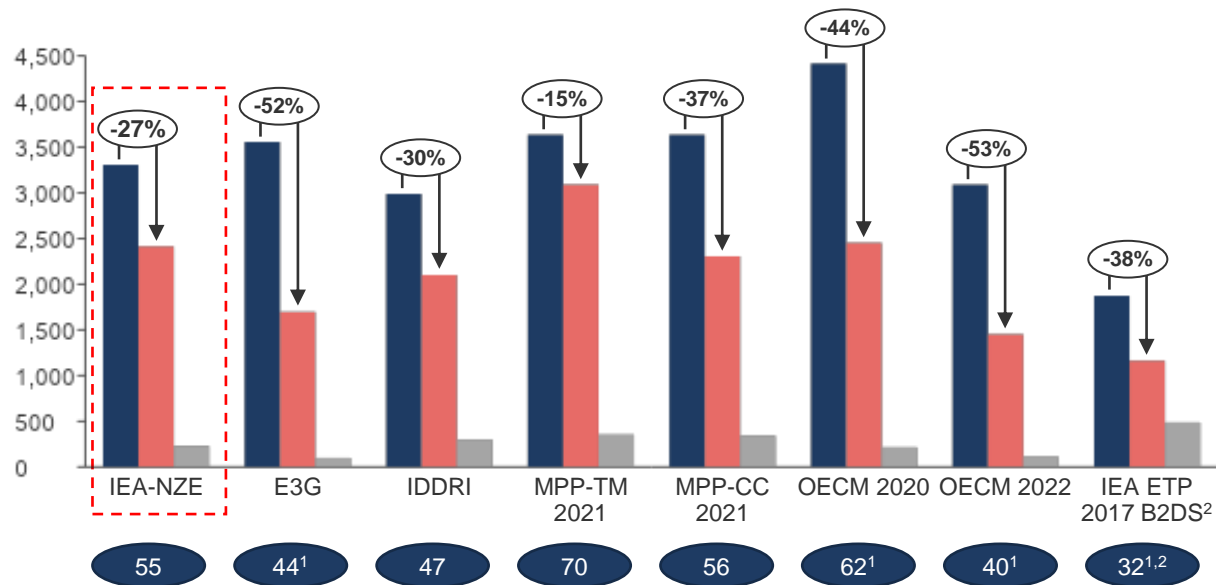
Note: scenarios use different system boundaries for their emissions and should not be compared one-to-one

Note 1: Based on linear interpolation of available datapoints
 Note 2: Only direct emissions related to Iron- & Steelmaking

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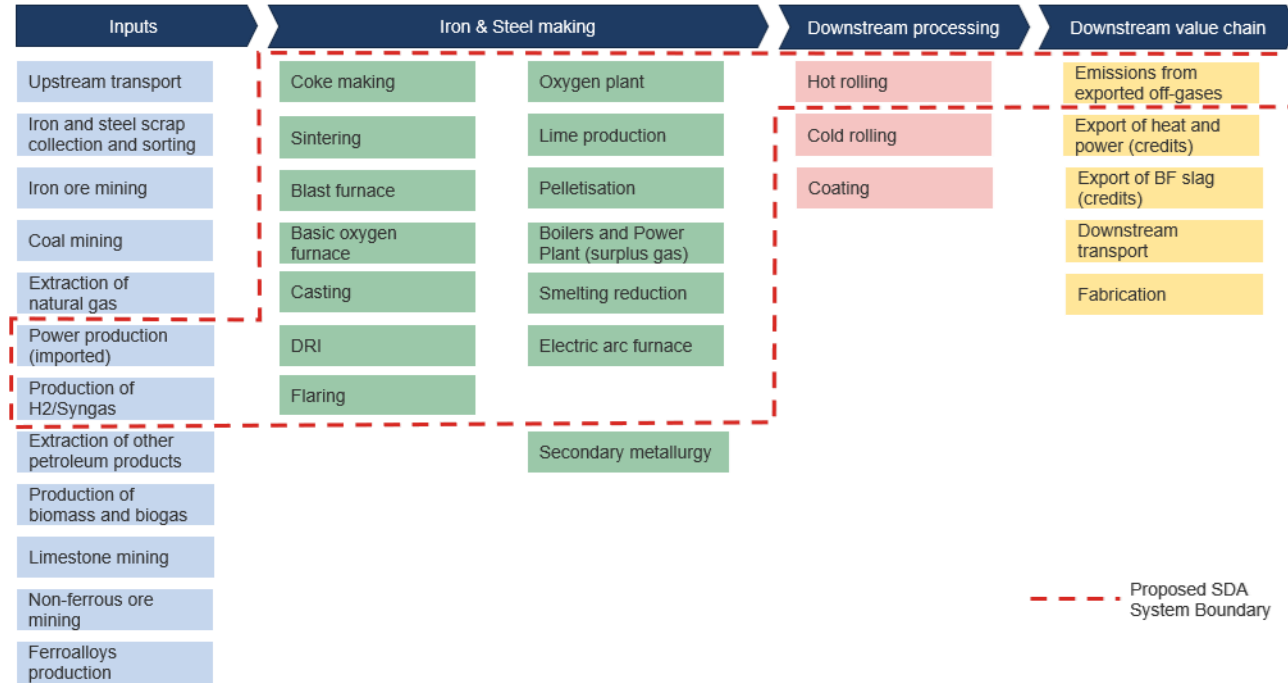


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Hot rolled product boundary with some upstream elements captures most vital sources of emissions without overburdening companies

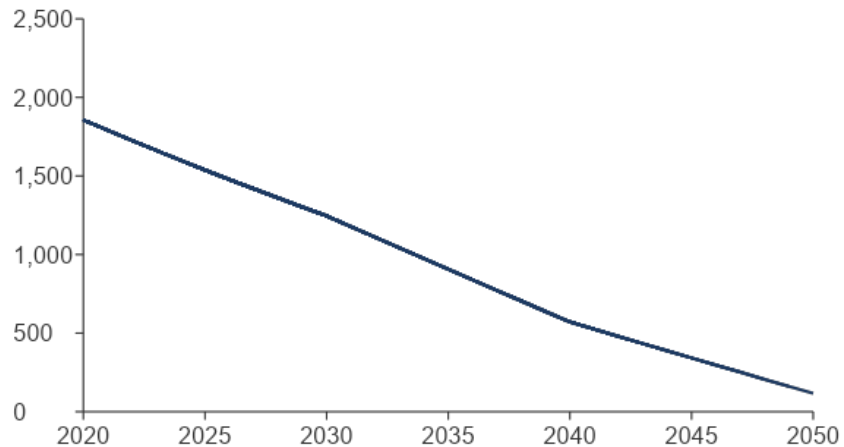


- System boundary ensures consistent treatment of all processes required to make steel regardless of whether they are in companies' scope 1, 2, or 3 (direct and indirect emissions)
- Upstream fossil fuel-related emissions have been excluded from the boundary due to large data uncertainty, but mandatory scope 3 target was proposed instead
- Hot rolling was included due to it being the last emission intense step shared by vast majority of steel products



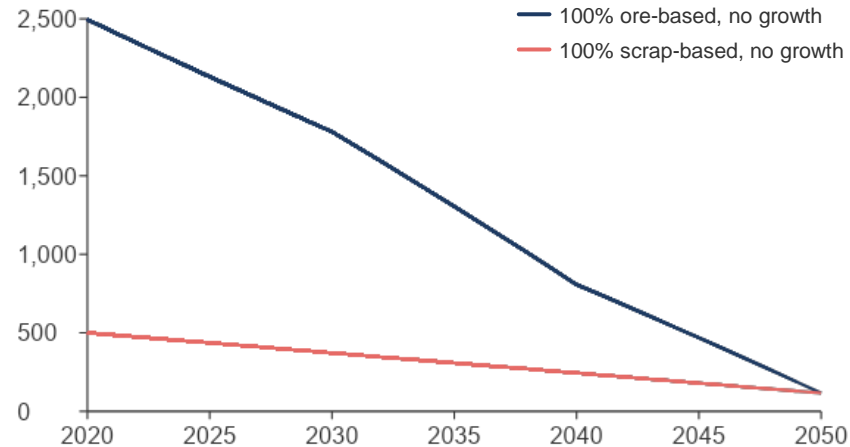
Ore- and scrap-based production present fundamentally different emissions profiles – hence the pathway was split

Average emission intensity of steel production – single pathway
kgCO₂eq/t hot rolled product



Implied carbon budget = ~55 GtCO₂

Average emission intensity of steel production – split pathway
kgCO₂eq/t hot rolled product



Ore-based budget = ~48 GtCO₂

Scrap-based budget = ~7 GtCO₂

Total = ~55 GtCO₂



Scrap presents a critical decarbonization lever for all steelmaking that utilizes a proportion of ore-based metallics

SENSITIVITY ANALYSIS (ILLUSTRATIVE)

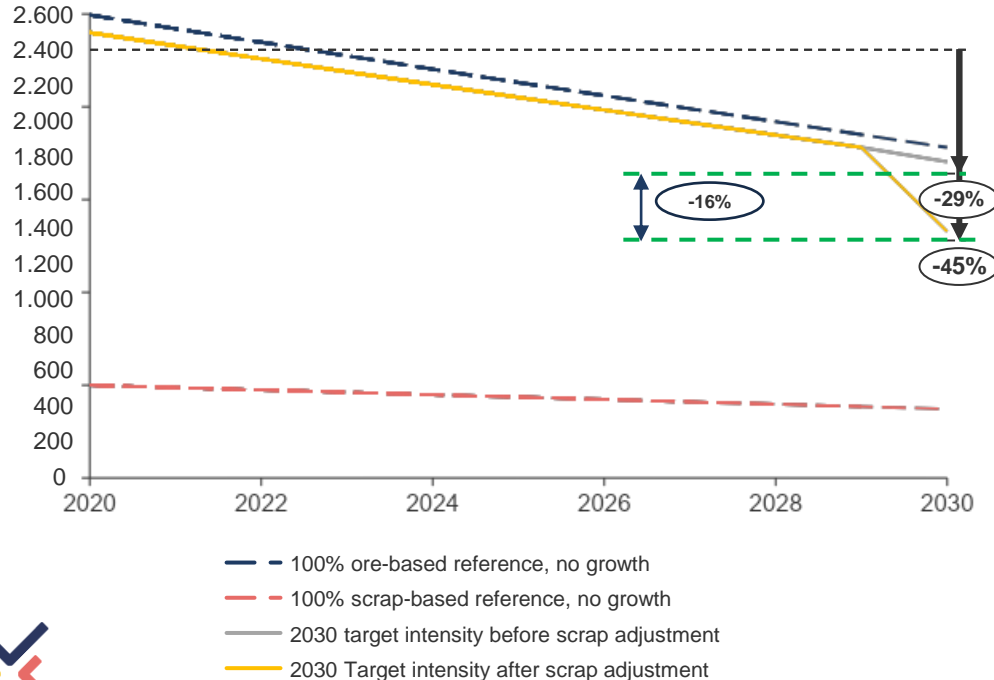
Metric	Unit	Baseline	65% final scrap ratio ¹	80% final scrap ratio ¹	95% final scrap ratio ¹
Ore-based budget	GtCO2	47.8	46.5	45.5	44.4
Scrap-based budget	GtCO2	7.0	8.2	9.3	10.4
Ore-based production	Mt hot rolled steel	35,947	30,571	26,022	21,473
Scrap-based production	Mt hot rolled steel	23,727	29,103	33,652	38,201
Ore-based budget per tonne of produced steel	kgCO2/t hot rolled steel	1,329	1,522	1,747	2,066
Scrap-based budget per t of produced steel	kgCO2/t hot rolled steel	293	282	276	272
Required average drop in emission intensity by 2030 for ore-based production	% vs 2020	-29%	-24%	-18%	-11%



Note 1: Assuming linear growth of scrap ratio between 2020 and 2050

Steelmaking assets will need to decarbonise irrespective of scrap use

Illustrative emission intensity evolution of BF-BOF single producer – with sliding scale methodology
kgCO₂/t hot rolled product, switch to 30% scrap in 2030



Metric	Emission intensity (kgCO ₂ /t hot rolled product)	2030 reduction vs 2020 (%)
Starting point	2,400	N/A
2030, zero scrap input	1,715	-29%
2030, 30% scrap input	1,328	-45%
2030 target adjustment resulting from scrap use	387	-16%



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CONSULTATION QUESTIONS

1. Do the guidance and pathway chosen sufficiently incentivise near-term emissions reductions in the steel industry?
2. Do you agree with the iron & steel core SDA boundary?
3. Do you agree with the use of a scrap-input-dependent approach, where the decarbonisation pathway for the sector is split into ore-based and scrap-based approaches, and company targets depend on their scrap ratio and how this changes over time?



EXAMPLE TARGETS

Company	Production type (stable between target year and base year except E, F)	Base year (2020) emission intensity (kg CO ₂ eq/ts)	Required intensity reduction by 2030 vs 2020 (%)
A	100% scrap-based EAF	500	26%
B	100% ore-based BF-BOF	2,400	29%
C	70% ore-based BF-BOF	1,700	29%
D	50% scrap, 50% HBI EAF	900	27%
E	90% ore-based going to 85% in target year	2,400	32%
F	100% ore-based going to 80% in target year	2,400	40%

TARGET WORDING - EXAMPLE

“Company E commits to reducing scope 1, 2 and 3 GHG emissions covered by the iron & steel core SDA boundary by 32% per tonne of hot rolled steel by 2030 from a 2020 base year. **The scrap share associated with this target increases 1.5 times over the target timeframe**”

“Company X also commits to reducing all other scope 1 and 2 GHG emissions by 42% over the same timeframe.”

“Company X further commits to reducing scope 3 GHG emissions from fuel and energy related emissions 25% over the same timeframe”



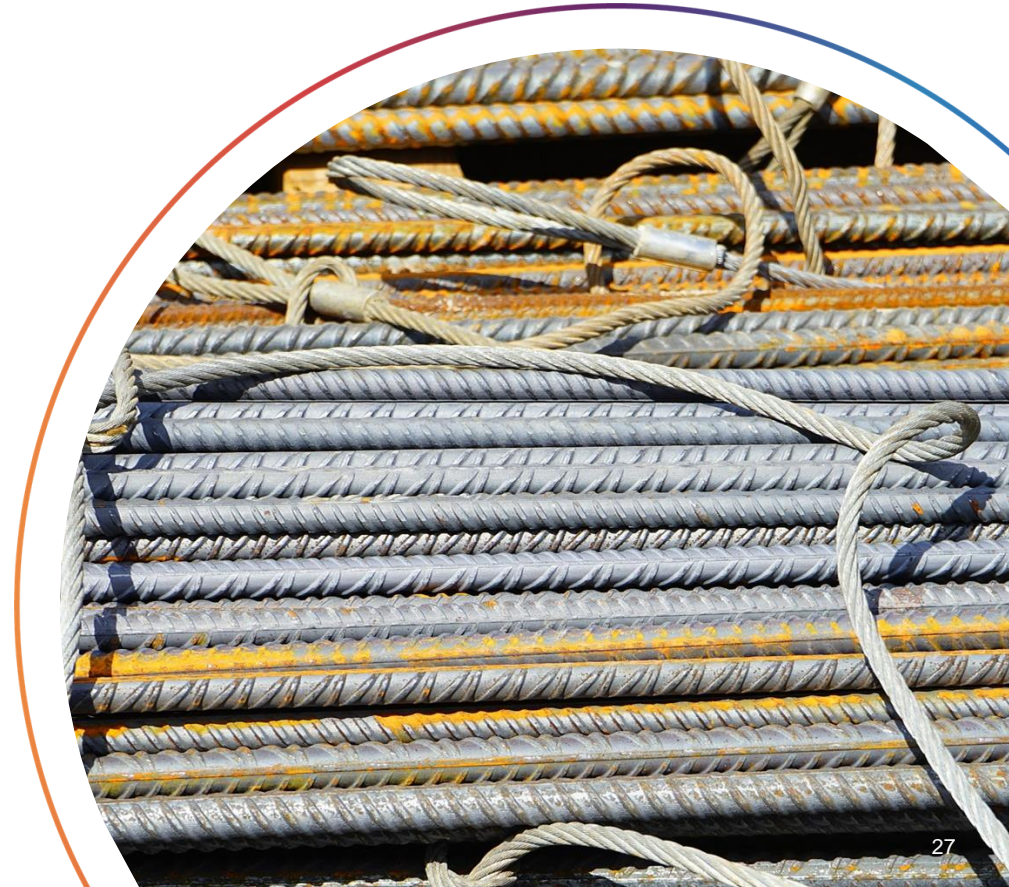
TARGET WORDING - CONSULTATION QUESTION

“In the draft guidance, companies must declare the relative change in scrap input associated with their target calculation. This is to provide transparency about the basis on which the target was calculated. Do you agree with this approach?”

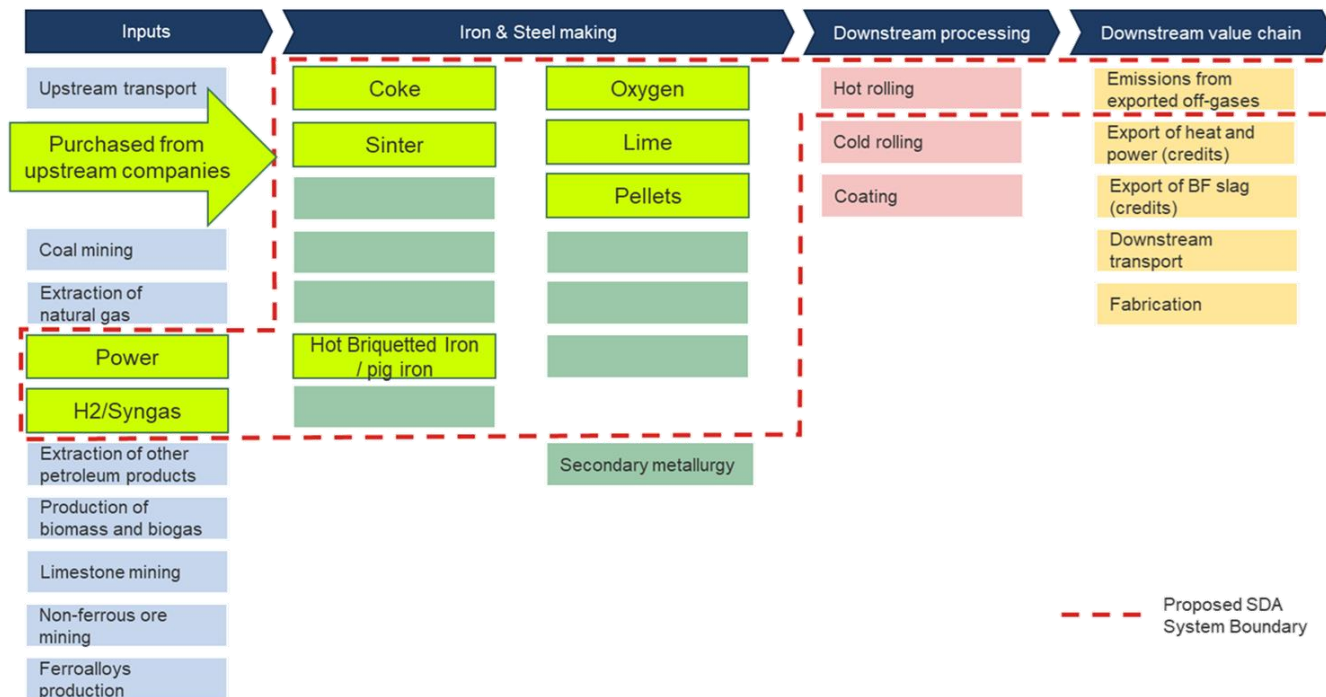


SCRAP DEFINITION - CONSULTATION QUESTION

“In the draft guidance, all scrap entering the melt shop (including home scrap and externally purchased scrap) is considered in the scrap ratio. Do you agree how the scrap ratio is determined?”

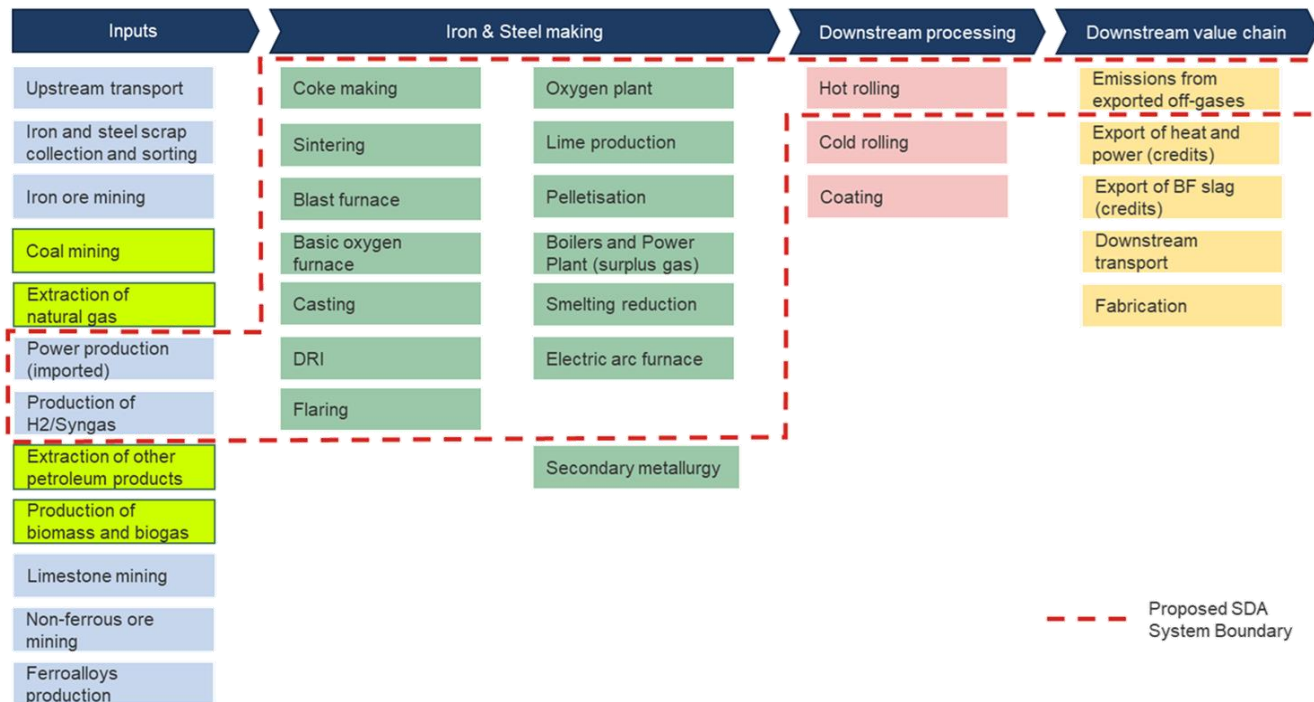


PURCHASED INTERMEDIATE PRODUCTS



Near-term steel company SBTs shall include at least 95% of suppliers' emissions for purchased intermediate products **falling within the core iron & steel SDA boundary**, irrespective of whether the share of these emissions compared to the total scope 1, 2, and 3 emissions of the company is above 40%.

SCOPE 3 MANDATORY TARGETS



Near-term steel company SBTs shall include a scope 3 target that covers at least scope 3 Category 3 “Fuel- and energy-related emissions not included in scope 1 or scope 2” regardless of their share of the company’s total emissions.

- All relevant scope 3 target-setting methods may be used
- On a cradle-to-gate basis
- Mandatory

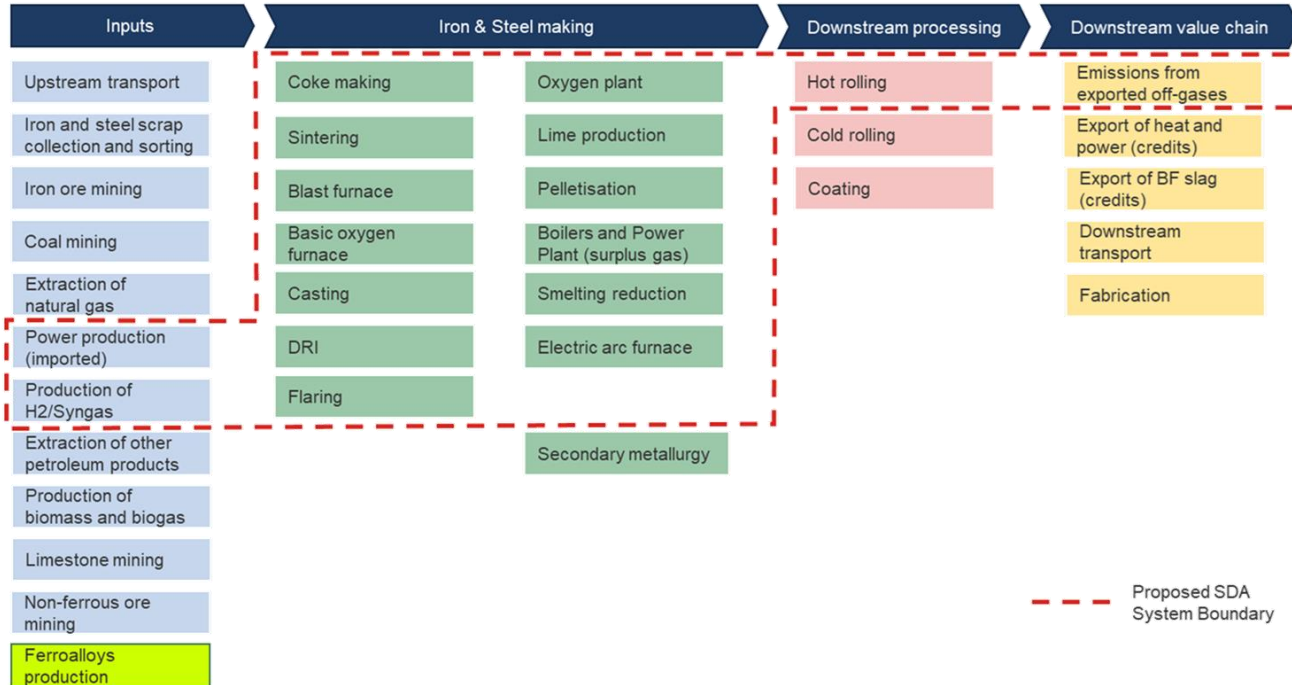
HIGH-ALLOY STEEL

High-alloy producers will have different emissions than carbon steel producers:

- Upstream production of ferro-alloys
- Process emissions during steelmaking from carbon content in ferro-alloys



SCOPE 3 TARGET: FERRO-ALLOY PRODUCTION



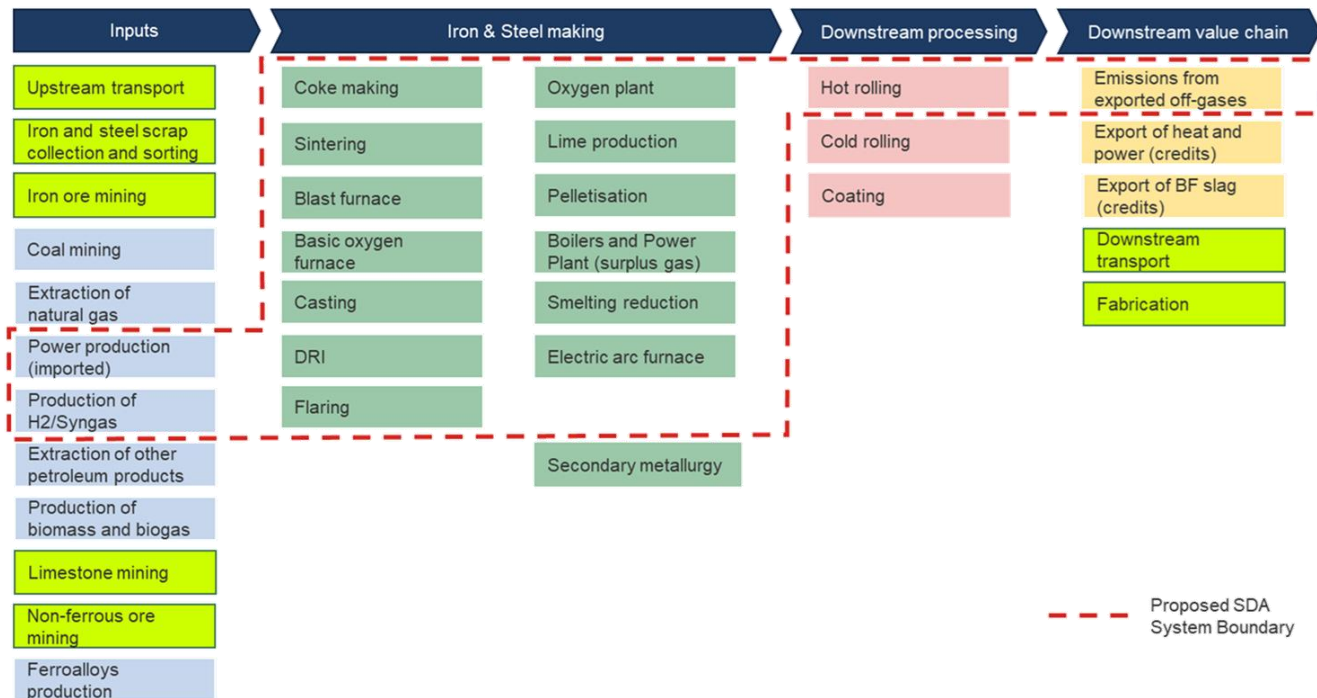
Stainless or high-alloy steel company near-term SBTs should include a scope 3 target that covers at least scope 3 Category 1 “Purchased goods and services” covering ferro-alloy sourcing, irrespective of the share of the total scope 1, 2 and 3 emissions for which they are responsible

FERRO-ALLOYS - CONSULTATION QUESTION

“Due to the absence of ferro-alloy 1.5°C emissions pathways, high-alloy steel producers may use the steel pathways for their steel production and must use generic methods for ferro-alloy production (either scope 1 or 3). Do you agree with this approach?”



SCOPE 3: ADDITIONAL OPTIONAL COVERAGE



Company can also set scope 3 emissions targets outside the SDA boundary e.g. emissions from transport of scrap

- All relevant scope 3 target-setting methods may be used
- Cradle-to-gate basis for upstream products
- Optional

UPSTREAM AND DOWNSTREAM COMPANIES

Activities	Target-setting methods	Ambition
Iron ore supplier	Iron & Steel SDA	1.5°C
	Other scope 3 methods <ul style="list-style-type: none"> • Cross-sector absolute reduction(2.5% annual reduction) • physical intensity (7% annual reduction) • economic intensity (7% annual reduction) • Supplier engagement 	Well-below 2°C
Hydrogen producer (considered sector agnostic product)	Cannot use the Iron & Steel SDA unless they can prove their products are solely used for the iron and steel making <ul style="list-style-type: none"> • Use other scope 3 methods 	Well-below 2°C
Automaker, construction (purchased steel)	<ul style="list-style-type: none"> • Iron & Steel SDA 	1.5°C
	Other scope 3 methods <ul style="list-style-type: none"> • Cross-sector absolute reduction(2.5% annual reduction) • physical intensity (7% annual reduction) • economic intensity (7% annual reduction) • Supplier engagement 	Well-below 2°C

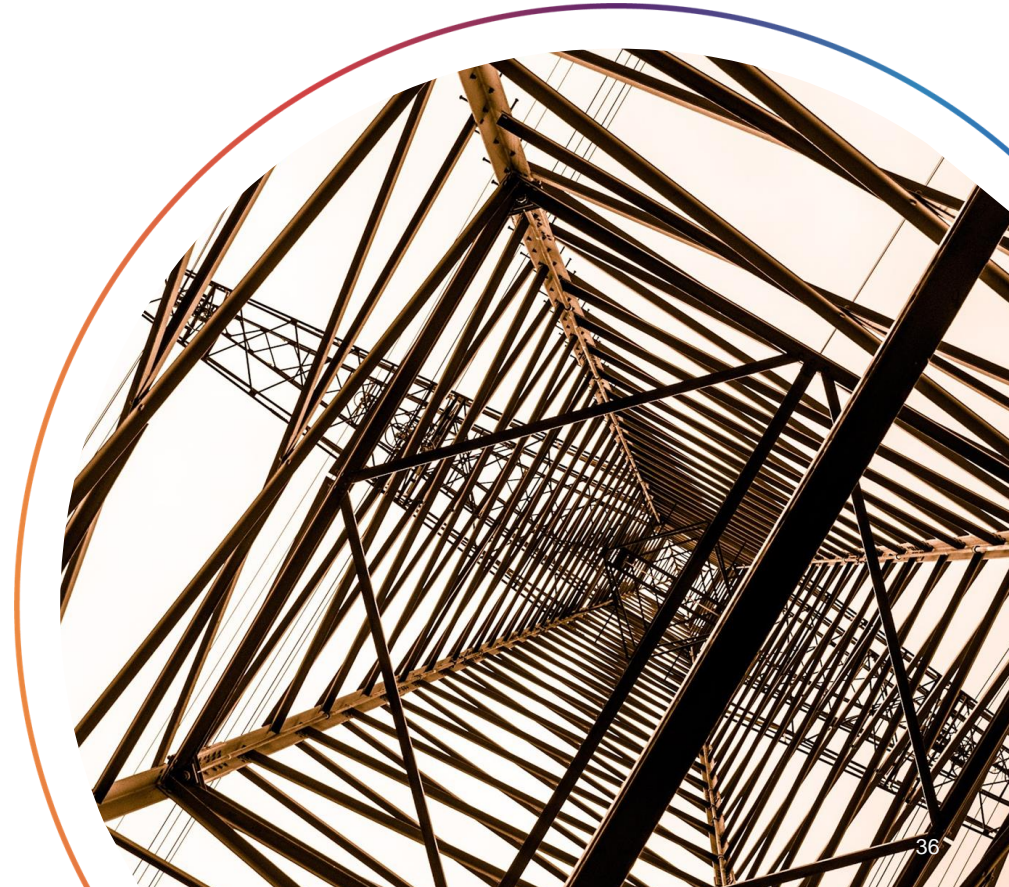
SUBMITTING TARGETS TO THE SBTi

- **Requirement:** The company shall provide justification of the growth projection used to calculate the target using the SDA
- **Recommendation:** Steel companies should disclose information such as near-term investments that demonstrate they commit to ensuring breakthrough technology relevant to meeting target ambition is available in the timeframe expected



SUBMITTING TARGETS TO THE SBTi

- **Recommendation:** Companies whose targets are expressed in intensity terms are recommended to publish also the absolute emissions reductions to be achieved by their targets, in order to:
 - Demonstrate that intensity targets lead to absolute emissions reductions, and
 - Demonstrate progress through the optimization of steel use



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RESPOND TO THE SURVEY!

- We invite you to **provide feedback** on the SBTi Steel Guidance until 23 January 2023.
- The guidance and materials can be found on the **SBTi steel webpage**: <https://sciencebasedtargets.org/sectors/steel>
- Slides and a **recording of this webinar** will be available on the **SBTi steel webpage**.

Feedback will be considered by the SBTi project team and EAG, however, the SBTi does not guarantee all perspectives will be reflected in the final materials

CONTACT US



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