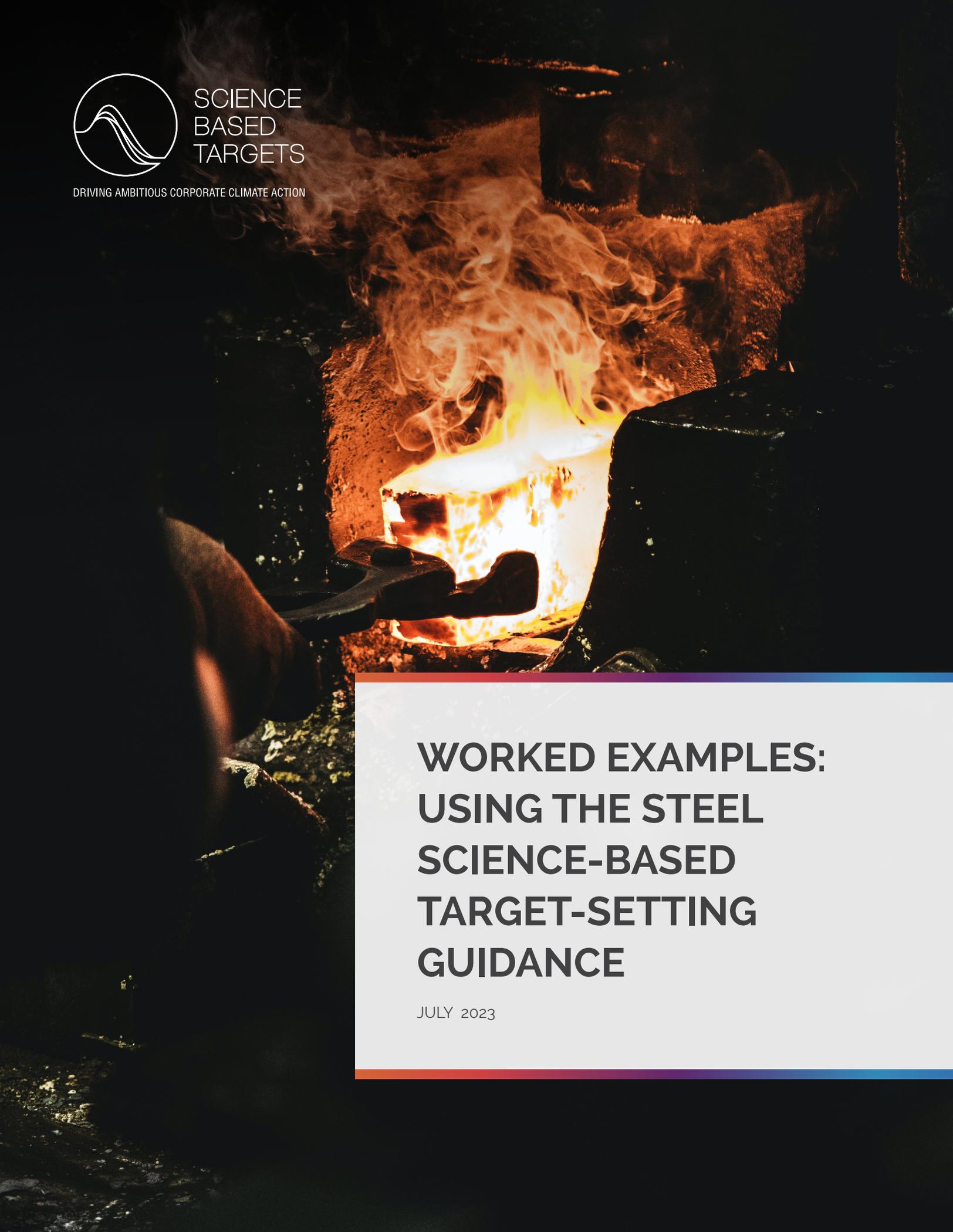SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

WORKED EXAMPLES: USING THE STEEL SCIENCE-BASED TARGET-SETTING GUIDANCE

JULY 2023

INTRODUCTION

This document provides worked examples to guide users in developing targets according to the Steel Science-Based Target-Setting Guidance. Therefore, this document is informative in nature and must be used in conjunction with the criteria outlined in the Steel Science-Based Target-Setting Guidance, the SBTi Net-Zero Standard and SBTi Near-Term Criteria.

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Example

1

PRIMARILY ORE-BASED STEELMAKER

Targets are set by company X, a producer with the following characteristics:

Base year:
2020

- **Activity:** Production of 10Mt of hot-rolled steel.
- **Emissions:** 24 Mt CO_2e.
- **Scrap ratio:** 10%.

Target year:
2030

- **Forecast activity:** Production of 10Mt of hot rolled steel.
- **Forecast scrap ratio:** 10%.

This producer carries out all the activities within the iron & steel core boundary itself, making up over 95% of its total scope 1 and 2 emissions. Therefore, this company can use the iron & steel SDA for the entirety of its own activities. These emissions amount to 24 Mt carbon dioxide equivalent (CO_2e).

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	10,000,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	24,000,000	*tCO$_2$e (Emissions intensity: 2.4 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	10,000,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	10%	*Enter a value between 0 and 100%*
Scrap ratio in target year	10%	*Enter a value between 0 and 100%*

Results: An emission intensity reduction of 29.4%.

In addition, this producer must set a scope 3 target for category 3 emissions. This includes all cradle-to-gate emissions for extraction and production of fossil fuels and transmission and distribution losses of purchased electricity. These amount to 2 Mt CO_2e. The producer chooses the Absolute Contraction Approach (ACA) to set this target at an ambition level of well-below 2°C (WB2C).

Section 1: Input data

Target-setting method	Absolute Contraction Approach	*Please review the latest version of the SBTi Guidance and Criteria*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output		
Target year output		
Scope 3 emissions (total or specific categories)	2,000,000	*tCO_2e*

Section 2: Absolute contraction approach

	Base year (2020)	Target year (2030)	% SBT reduction
Company | Scope 3 emissions - WB2C (tCO_2e)	2,000,000	1,500,000	25%

Target wording:

Company X commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 29.4% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with this target annually starting from the base year.

Company X also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities 25% over the same timeframe.

2

PRIMARILY SCRAP-BASED STEELMAKER PURCHASING HOT BRIQUETTED IRON (HBI)

Targets are set by a producer with the following characteristics:

Base year:
2020

- **Activity:** Production of 10Mt of hot rolled steel.
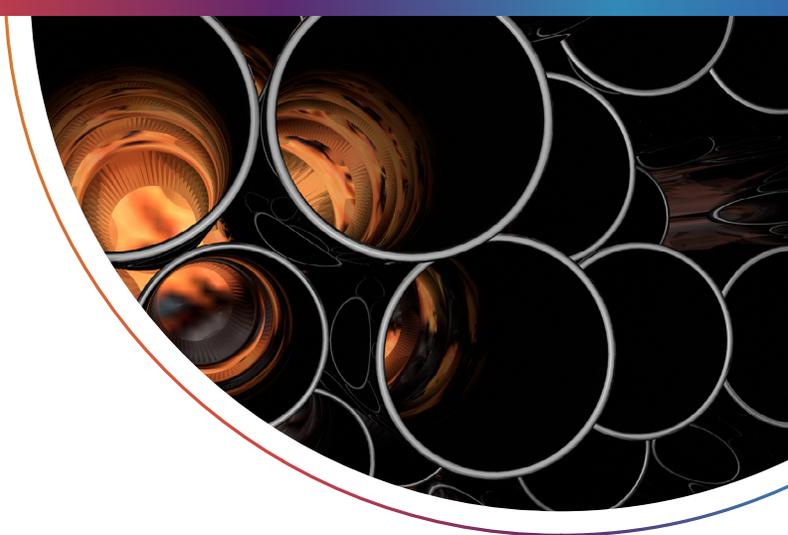- **Scrap ratio:** 70%.

Target year:
2030

- **Forecast activity:** Production of 10Mt of hot rolled steel.
- **Forecast scrap ratio:** 70%.

This producer uses a mainly scrap-based electric arc furnace (EAF) production route and so needs to include its activities falling within the iron & steel core boundary, but also the upstream emissions from the production of purchased intermediate products falling within the iron & steel core boundary, which in this case is mostly HBI. These emissions are 2.4 Mt CO_2e for the purchased HBI and 3 Mt CO_2e for electricity and fuels used by the steelmaker. These emissions make up over 95% of its total core-boundary emissions. Therefore, this company can use the iron & steel SDA for the entirety of its own activities and purchased HBI.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	10,000,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	5,400,000	*tCO_2e (Emissions intensity: 0.54 tCO_2e/t)*

Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	10,000,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	70%	*Enter a value between 0 and 100%*
Scrap ratio in target year	70%	*Enter a value between 0 and 100%*

Results: An emission intensity reduction of 25.1%.

In addition, this producer must set a scope 3 target for category 3 emissions. This includes all cradle-to-gate emissions for extraction and production of fossil fuels happening outside the iron & steel core boundary (so it also includes cradle-to-gate emissions for the fuels used in the production of the purchased HBI), as well as transmission and distribution losses of purchased electricity. These amount to 0.3 Mt CO_2e. The producer chooses the ACA to set this target at an ambition level of WB2C.

Section 1: Input data

Target-setting method	Absolute Contraction Approach	*Please review the latest version of the SBTi Guidance and Criteria*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output		
Target year output		
Scope 3 emissions (total or specific categories)	300,000	*tCO$_2$e*

Section 2: Absolute contraction approach

	Base year (2020)	Target year (2030)	% SBT reduction
Company	Scope 3 emissions - WB2C (tCO$_2$e)	300,000	225,000	25%

Target wording:

Company X commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 25.1% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with the target annually starting from the base year.

Company X also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities 25% over the same timeframe.

3

COMPANY WITH HIGHER-THAN-AVERAGE ACTIVITY GROWTH

Targets are set by a producer with the following characteristics:

Base year:
2020

- **Activity:** Production of 10Mt of hot rolled steel.
- **Scrap ratio:** 10%.

Target year:
2030

- **Forecast activity:** Production of 12Mt of hot rolled steel.
- **Forecast scrap ratio:** 10%.

This producer carries out all the activities within the iron & steel core SDA boundary itself, and these activities make up over 95% of its total scope 1 and 2 emissions. Therefore, this company can use the iron & steel SDA for the entirety of its own activities. These emissions amount to 24 Mt CO_2e.

This producer is identical to Example 1, but its production grows from 10 Mt to 12 Mt hot rolled steel over the target timeframe.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	10,000,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	24,000,000	*tCO$_2$e (Emissions intensity: 2.4 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	12,000,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	10%	*Enter a value between 0 and 100%*
Scrap ratio in target year	10%	*Enter a value between 0 and 100%*

Result: An emission intensity reduction of 35.6%.

In addition, this producer must set a scope 3 target for category 3 emissions. This includes all cradle-to-gate emissions for extraction and production of fossil fuels and transmission and distribution losses of purchased electricity. These amount to 2 Mt CO_2e. The producer chooses the ACA to set this target at an ambition level of WB2C.

Section 1: Input data

Target-setting method	Absolute Contraction Approach	*Please review the latest version of the SBTi Guidance and Criteria*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output		
Target year output		
Scope 3 emissions (total or specific categories)	2,000,000	*tCO$_2$e*

Section 2: Absolute contraction approach

	Base year (2020)	Target year (2030)	% SBT reduction
Company | Scope 3 emissions - WB2C (tCO$_2$e)	2,000,000	1,500,000	25%

Target wording:

Company X commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 35.6% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with this target annually starting from the base year.

Company X also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities by 25% over the same timeframe.

Example

4

COMPANY WITH CHANGING SCRAP RATIO

This producer is identical to Example 1, but its scrap ratio grows from 10% to 20% over the target timeframe. Companies are not required to communicate their intended scrap ratio change when setting their target. However, companies should re-assess whether they have reached their actual scrap-input-dependent target in their target year.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year	Activity output	10,000,000	*Tonnes of hot rolled steel*
Base year	Emissions within the core boundary*	24,000,000	*tCO$_2$e (Emissions intensity: 2.4 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year	Type of activity projection	Target year output	*Dropdown*
Target year	Activity output	10,000,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	10%	*Enter a value between 0 and 100%*
Scrap ratio in target year	20%	*Enter a value between 0 and 100%*

Result: An emission intensity reduction of 35.4%.

Target wording:

Company X commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 35.4% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with the target annually starting from the base year.

Company X also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities by 25% over the same timeframe.

Example

5

UPSTREAM IRON ORE PRODUCER SETTING A SCOPE 3 TARGET

(USING THE IRON & STEEL SDA)

An iron ore producer (company A) wants to set targets for its scope 3 category 10 (processing of sold products). This company sold 100 Mt iron ore to a steel producer in 2020, and through this sold iron ore, its scope 3 category 10 emissions are 133 $MtCO_2e$.

The iron ore producer wants to increase its iron ore output in 2030 to 150 Mt. Its scope 3 emissions are over 40% of its total scope 1, 2 and 3 emissions in the base year, so the producer has to set a scope 3 target. The producer can use any of the scope 3 target methods for these scope 3 emissions inside the iron & steel core boundary and has chosen to use the iron & steel SDA for its scope 3 category 10 target. Because it is using the iron & steel SDA, the producer will need to include how much steel is produced from its sold iron ore, and the associated emissions.

Targets are set by a producer with the following characteristics:

Base year: 2020

- **Activity:** Production of 100 Mt of iron ore.
- **Activity expanded to hot rolled steel:** Assuming 60% iron content (Fe) in the iron ore and 4% yield losses, 100 Mt iron ore is processed into 100 Mt * 0.58 t hot rolled steel / t iron ore = 57.7 Mt hot rolled steel.
- **0% scrap content** assumed because the producer delivers pure iron ore.
- **Scope 3 emissions:** 133 $MtCO_2e$ (all inside the core SDA boundary).

Target year: 2030

- **Forecast activity:** Production of 150 Mt of iron ore.
- **Forecast activity expanded to hot rolled steel:** Assuming 60% Fe content in the iron ore and 4% yield losses, 150 Mt iron ore is processed into 150 Mt * 0.58 t hot rolled steel / t iron ore = 86.5 Mt hot rolled steel.
- **0% scrap content** assumed because the producer delivers pure iron ore.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	57,700,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	133,000,000	*tCO$_2$e (Emissions intensity: 2.31 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	86,500,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	0%	*Enter a value between 0 and 100%*
Scrap ratio in target year	0%	*Enter a value between 0 and 100%*

Results: A scope 3 category 10 (processing of sold products) emission reduction of 47% per tonne of hot rolled steel.

Mandatory targets covering scope 1, 2 and other scope 3 categories are not included in this example for brevity. Other category targets calculated using the same method - ACA - can be combined into one target.

Target wording:

Company A commits to reduce scope 3 GHG emissions from the processing of sold products in the iron & steel core SDA boundary by 47% per tonne of hot rolled steel by 2030 from a 2020 base year.

(Mandatory targets covering scope 1, 2 and other scope 3 categories are not included in this example for brevity.)

Example

6

COMBINING AND AGGREGATING TARGETS

(COMBINING INTENSITY TARGETS WITHIN THE CORE BOUNDARY WITH ABSOLUTE TARGETS OUTSIDE THE BOUNDARY)

The table below shows two options for reporting a combination of intensity targets set using the iron & steel SDA (for emissions inside the core boundary) and absolute targets (for emissions outside the core boundary). Companies can choose to publish these targets separately (option 1) or as aggregate targets (option 2).

		BASE YEAR EMISSIONS (tCO$_2$)	TARGET YEAR EMISSIONS (tCO$_2$)	% INTENSITY REDUCTION	% ABSOLUTE REDUCTION	EXAMPLE TARGET WORDING
Option 1	Iron & steel core SDA boundary emissions	2,000,000	1,434,339	28%	28%	Company X commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 28% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with this target annually starting from the base year.
	Other emissions	800,000	464,000		42%	Company X also commits to reduce all other absolute scope 1 and 2 GHG emissions outside the iron & steel core boundary by 42% over the same timeframe.
Option 2	Aggregated scope 1 and 2 targets	2,800,000	1,898,339		32%	Company X commits to reduce absolute scope 1 and 2 GHG emissions by 32% by 2030 from a 2020 base year. Within this target, company X commits to reduce scope 1 and 2 GHG emissions within the iron & steel core boundary by 28% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with this target annually starting from the base year. Company X also commits to reduce all other absolute scope 1 and 2 GHG emissions 42% over the same timeframe.

7

HIGH-ALLOY STEEL

Stainless steel company Z produced 2.5 Mt stainless steel in 2020 and plans to have a stable production level up to 2030. The company purchases ferronickel and scrap to be melted in the EAF, with a scrap ratio of 50%.

	$MtCO_2e$	COMMENT
Scope 1 emissions	**1.2**	All company Z's scope 1 emissions are inside the core boundary.
Scope 2 emissions	**0.8**	All company Z's scope 2 emissions are inside the core boundary.
Scope 3 emissions	**3.0**	60% of scope 1, 2 and 3 emissions (therefore a scope 3 target is mandatory).
Purchased ferronickel	2.2	Outside the core boundary, but a recommended scope 3 target.
Upstream fuel and electricity-related emissions	0.4	Outside the core boundary, but mandatory upstream fuels emissions target, use cross-sector target approach (WB2C) - on a cradle-to-gate basis.
Downstream transportation	0.2	Outside the core boundary, use a cross-sector target approach (WB2C) - on a cradle-to-gate basis.
Use of sold products	0.2	Outside the core boundary, use cross sector target approach (WB2C).
Total emissions	**5.0**	

Company Z does not purchase or sell any products within the core boundary: it can use the iron & steel core boundary for its scope 1 and 2 targets without adjusting its emissions to include the full boundary.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	2,500,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	2,000,000	*tCO$_2$e (Emissions intensity: 0.8 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	2,500,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	50%	*Enter a value between 0 and 100%*
Scrap ratio in target year	50%	*Enter a value between 0 and 100%*

Result: An emission intensity reduction of 26.9%.

In addition, this stainless-steel producer must set a mandatory scope 3 target for energy- and fuel-related emissions (scope 3 category 3). It is also recommended to set a scope 3 target for ferroalloys production regardless of whether scope 3 is over the 40% threshold.

The total scope 3 target includes all cradle-to-gate emissions of purchased fuels (from raw material extraction and production), transmission and distribution losses of purchased electricity, emissions from biomass and biofuel sourcing, and the production of sourced ferroalloys[1]. The producer chooses the ACA to set this target at an ambition level of WB2C. Since energy and fuel-related emissions and ferroalloys emissions comprise more than 67% of total scope 3 emissions, the producer does not need to include any other scope 3 emissions in the scope 3 target, though the SBTi always encourages maximal coverage of emissions with targets.

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1 Including emissions from ferroalloys production is recommended but not required.

Section 1: Input data

Target-setting method	Absolute Contraction Approach	*Please review the latest version of the SBTi Guidance and Criteria*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output		
Target year output		
Scope 3 emissions (total or specific categories)	2,600,000	*tCO$_2$e*

Section 2: Absolute contraction approach

	Base year (2020)	Target year (2030)	% SBT reduction
Company | Scope 3 emissions - WB2C (tCO$_2$e)	2,600,000	1,950,000	25%

Target wording:

Company Z commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 26.9% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company Z will publish the scrap ratio associated with the target annually starting from the base year.

Company Z also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities and purchased goods by 25% over the same timeframe.

Example
8

SALE OF INTERMEDIATE PRODUCTS - CASE 1

IRON PRODUCER SELLING HBI TO TWO DIFFERENT STEELMAKERS AND USING THE IRON & STEEL SDA FOR DOWNSTREAM PROCESSING EMISSIONS

Company A produces HBI through a direct reduced iron (DRI) process, emitting 0.7 t CO2/t HBI. In 2020 it produced 5 Mt of HBI, which it sold to two different steelmakers: 3 Mt to company B and 2 Mt to company C. Company B produces 2.8 Mt steel from this HBI, emitting 1.5 Mt CO_2e. Company C produces 1.9 Mt steel from the HBI, emitting 0.4 Mt CO_2e.

Because company A wants to set targets using the iron & steel SDA wherever possible, the company uses this approach to include all downstream processing of the HBI up to and including hot rolling.

Base year: 2020

- **Activity:** Production of 5 Mt of HBI, further processed into 2.8 + 1.9 Mt = 4.7 Mt hot rolled steel (values obtained from customers, companies B and C).
- **Emissions:** 3.5 Mt CO_2.
- **Scrap ratio:** 0%.
- **Further processing activity within the core SDA boundary:**

    2.8 Mt of hot rolled steel production by company B, emitting 1.5 Mt CO_2e.
    1.9 Mt of hot rolled steel production by company C, emitting 0.4 Mt CO_2e.

Target year: 2030

- **Forecast activity:** Production of 5 Mt of HBI, resulting in 4.7 Mt of hot rolled steel production.
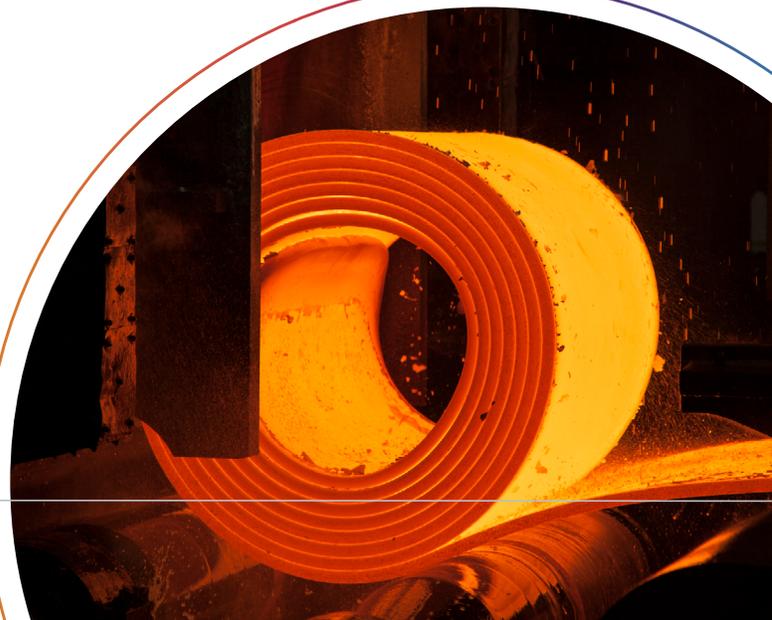
	MtCO$_2$e	COMMENT
Scope 1 and 2 emissions	**3.6**	
DRI process	3.5	Company A's HBI production, inside iron & steel core boundary (0.7 tCO$_2$e/t HBI * 5 Mt HBI)
Transport of HBI	0.1	Outside the core boundary
Scope 3 emissions	**2.1**	
Steelmaking from sold HBI (company B)	1.5	Inside the core boundary
Steelmaking from sold HBI (company C)	0.4	Inside the core boundary
Cold rolling and coating (companies B and C)	0.2	Outside the core boundary
Total emissions	**5.7**	

HOW TO CALCULATE IRON & STEEL SDA TARGETS IN THE TOOLS

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	4,700,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	5,400,000	*tCO$_2$e (Emissions intensity: 1.15 tCO$_2$e/t)*
Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	4,700,000	*Tonnes of hot rolled steel*
Scrap ratio in base year	0%	*Enter a value between 0 and 100%*
Scrap ratio in target year	0%	*Enter a value between 0 and 100%*

Result: An emission intensity reduction of 27.8%.

Company A's scope 3 emissions comprise more than 40% of its scope 1, 2 and 3 emissions, so it has to set a target for at least 67% of its scope 3 emissions. However, it has already included 90% (1.5 Mt + 0.4 Mt)/ 2.1 Mt of its scope 3 emissions in the iron & steel SDA target, thus satisfying this requirement.

Target wording:

Company A commits to reduce scope 1, 2 and 3 GHG emissions covered by the iron & steel core boundary by 27.8% per tonne of hot rolled steel by 2030 from a 2020 base year.

Example

9

SALE OF INTERMEDIATE PRODUCTS - CASE 2

STEELMAKER SELLING SURPLUS REDUCTANT OR OTHER BASIC INTERMEDIATE PRODUCTS (COKE, SYNGAS/HYDROGEN USED FOR IRON ORE REDUCTION, SINTER, PELLETS, ETC.)

A 90% ore-based producer (company X) sets targets with the following characteristics:

**Base year:
2020**

- **Activity:** Production of 10 Mt of hot rolled steel.
- **Scrap ratio:** 10%.
- **Scope 1 and 2 emissions:** 24.15 MtCO$_2$e.
- **Other factors:** Production of 4 Mt coke (on a dry basis) with 0.8 Mt coke being surplus thanks to use of Pulverized Coal Injection (PCI) at the level of ~200 kg/t hot metal (HM) in the plant. 0.8 Mt surplus coke is sold to other steelmakers.
- Other steelmakers use the 0.8 Mt coke to produce 1.8 Mt hot rolled steel, emitting 2.0 tCO$_2$e/t hot rolled steel on average and using 10% scrap.

**Target year:
2030**

- **Forecast activity:** Production of 10Mt of hot rolled steel.
- **Forecast scrap ratio:** 10%.
- **Other factors:** Production of 4 Mt coke (on a dry basis) with 0.8 Mt coke being surplus thanks to use of PCI at the level of ~200 kg/t HM in the plant. 0.8 Mt surplus coke is sold to other steelmakers.
- Other steelmakers use the 0.8 Mt coke to produce 1.8 Mt hot rolled steel, emitting 2.0 tCO$_2$e/t hot rolled steel on average and using 10% scrap.

This producer carries out all the activities within the iron & steel core boundary itself, and these activities make up over 95% of its total scope 1 and 2 emissions. Therefore, this company can use the iron & steel SDA for the entirety of its own and downstream iron & steel production.

The scope 3 emissions from follow-on processes using the surplus coke in the core boundary are 3.6 Mt CO_2e (1.8 Mt x 2.0 t CO_2e/t hot rolled steel). These emissions are all inside the core boundary and therefore the producer must add these emissions and the produced hot rolled steel to its own activities, and include them when setting a target using the iron & steel SDA. The total activity used for setting the target is 11.8 Mt hot rolled steel, and its total emissions are 24.15 Mt + 3.6 Mt = 27.75 Mt CO_2e. The production-weighted average scrap ratio is 10%.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year | Activity output	11,800,000	*Tonnes of hot rolled steel*
Base year | Emissions within the core boundary*	27,750,000	*tCO₂e (Emissions intensity: 2.35 tCO₂e/t)*
Target year	2030	*Select a target year*
Target year | Type of activity projection	Target year output	*Dropdown*
Target year | Activity output	11,800,000	*Tonnes of hot rolled steel*
Scrap ratio in base year	10%	*Enter a value between 0 and 100%*
Scrap ratio in target year	10%	*Enter a value between 0 and 100%*

Result: An emission intensity reduction target of 29.4%.

In addition, this producer must set a scope 3 target for category 3 emissions. This includes all cradle-to-gate emissions for extraction and production of fossil fuels and transmission and distribution losses of purchased electricity. These amount to 2 Mt CO_2e. The producer chooses the ACA for these emissions to set this target at an ambition level of WB2C.

Section 1: Input data

Target-setting method	Absolute Contraction Approach	*Please review the latest version of the SBTi Guidance and Criteria*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output		
Target year output		
Scope 3 emissions (total or specific categories)	2,000,000	*tCO$_2$e*

Section 2: Absolute contraction approach

	Base year (2020)	Target year (2030)	% SBT reduction
Company | Scope 3 emissions - WB2C (tCO$_2$e)	2,000,000	1,500,000	25%

Target wording:

Company X commits to reduce scope 1, 2 and 3 emissions covered by the iron & steel core boundary by 29.4% per tonne of hot rolled steel by 2030 from a 2020 base year. As this target calculation depends on the scrap ratio projection, company X will publish the scrap ratio associated with the target annually starting from the base year.

Company X also commits to reduce absolute scope 3 GHG emissions from fuel- and energy-related activities by 25% over the same timeframe.

Example

10

DOWNSTREAM COMPANIES

Company A is an automotive company producing 1 million vehicles per year. Company A is setting science-based targets for its scope 1, 2 and 3 emissions. Its scope 3 emissions include (but are not limited to) emissions from purchased steel. This example shows how the iron & steel SDA tool can be used by company A to set a scope 3 target for purchased steel. Please note company A will also need to set other scope 1, 2 and 3 targets, which are not included in this example.

To produce 1 million vehicles, the company uses 0.9 Mt of steel – the production of which makes up a substantial share of the company's scope 3 emissions from purchased goods. Company A purchases steel with a cradle-to-gate emission intensity of 1.5 t CO_2/t hot rolled steel.

Company A wants to set a scope 3 target for its emissions from purchased steel, and chooses to use the iron & steel SDA as set out below:

Base year:
2020

- **Activity:** 0.9 Mt steel (for the production of 1 million vehicles).
- **Emissions (from purchased steel):** 1.5 Mt CO_2e.

Target year:
2030

- **Forecast activity:** Production of 1.2 million vehicles, using 1.3 Mt of steel.

The company uses the scope 3 tab of the tool, and selects the target-setting method **"Steel SDA - for steel purchasers"**.

Section 1: Input data

Target-setting method	Steel SDA - for steel purchasers	*This option is for steel purchasers setting scope 3 category 1 targets. For other target-setting options and other scope 3 categories, please use the cross-sector SBT near-term tool*
Base year	2020	*Dropdown*
Target year	2030	*Dropdown*
Base year output	900,000	*Tonnes of purchased steel*
Target year output	1,300,000	*Tonnes of purchased steel*
Scope 3 emissions (category 1)	1,500,000	*tCO$_2$e (please refer to the SBTi Steel Guidance)*

Section 2: Steel procurement tool

	Base year (2020)	Target year (2030)	% SBT reduction
Physical intensity (tCO$_2$t)	1,667	0.863	48.2%

Target wording:

Company A commits to reduce scope 3 category 1 (purchased goods and services) GHG emissions covered by the iron & steel core boundary by 48.2% per tonne of hot rolled steel by 2030 from a 2020 base year.

(Mandatory targets covering scope 1, 2 and other scope 3 categories are not included in this example for brevity.)

Example

11

SCRAP PRODUCER SETTING ITS SCOPE 3 TARGETS USING THE IRON & STEEL SDA

Company W sources, sorts and processes post-consumer steel scrap to produce an intermediate product mainly for EAF and BOF (basic oxygen furnace) steelmakers. Its scope 3 emissions make up over 90% of its total scope 1, 2 and 3 emissions. These scope 3 emissions are dominated by the downstream processing of sold intermediate metal products (i.e., all processes inside the core boundary up to and including hot rolling that are used to produce hot rolled steel). **Company W's activities are as follows:**

Base year:
2020

- **Activity:** Production of 5 Mt of scrap.
- **Scope 3 emissions:** From the processing of sold products into 4.5 Mt of hot rolled steel: 1.85 MtCO$_2$e.
- The sold scrap is used in steelmaking with an average scrap ratio of 90%.

Target year:
2030

- **Forecast activity:** Production of 6 Mt of scrap, used to produce 5.5 Mt of hot rolled steel.

	MtCO$_2$e	COMMENT
Scope 1 and 2 emissions	**0.15**	Outside the iron & steel core boundary
Scope 3 emissions	**2.15**	93 % of scope 1, 2 and 3
Third-party transport	0.3	Outside the iron & steel core boundary
Processing of sold product up to and including hot rolling	1.85	Inside the iron & steel core boundary
Total emissions	**2.3**	

Because scrap collection and sorting is not included in the iron & steel core boundary, company W cannot use the iron & steel SDA for its scope 1 and 2 emissions. Thus, it must use the ACA at a 1.5°C ambition level.

Section 1: Input data

Target-setting method	Absolute Contraction Approach	
SDA scenario		*Not applicable*
SDA sector		*Not applicable*
Base year	2020	*Select a base year*
Base year | Activity output		
Base year | Scope 1 emissions	50,000	tCO_2e
Base year | Scope 2 emissions	100,000	tCO_2e
Target year	2030	*Select a target year*

Resulting targets for scope 1 and 2: 42% reduction between 2020-2030.

Since company W's scope 3 emissions are over the 40% threshold, it must set a scope 3 target for at least 67% of its scope 3 emissions. Company W opts to use the iron & steel SDA for their scope 3 emissions – meaning they have to include all processes their product undergoes inside the iron & steel core boundary. (Alternatively, this producer could use other scope 3 methods.) These emissions amount to 1.85 Mt CO_2e.

Section 1: Input data

Target-setting method	Sectoral Decarbonization Approach	
SDA scenario	SBTi 1.5°C	
SDA sector	Iron & steel - core boundary	
Base year	2020	*Select a base year*
Base year	Activity output	4,500,000	*Tonnes of hot rolled steel*
Base year	Emissions within the core boundary*	1,850,000	*tCO$_2$e (Emissions intensity: 0.41 tCO$_2$e/t)*

Target year	2030	*Select a target year*
Target year	Type of activity projection	Target year output	*Dropdown*
Target year	Activity output	5,500,000	*Tonnes of hot rolled steel*

Scrap ratio in base year	90%	*Enter a value between 0 and 100%*
Scrap ratio in target year	90%	*Enter a value between 0 and 100%*

Resulting targets for scope 3: 29.2% emission intensity reduction.

Target wording:

Company W commits to reduce absolute scope 1 and 2 emissions 42% by 2030 from a 2020 base year.

Company W also commits to reduce scope 3 GHG emissions from processing of sold products covered by the iron & steel core boundary 29.2% per tonne of hot rolled steel by 2030 from a 2020 base year.
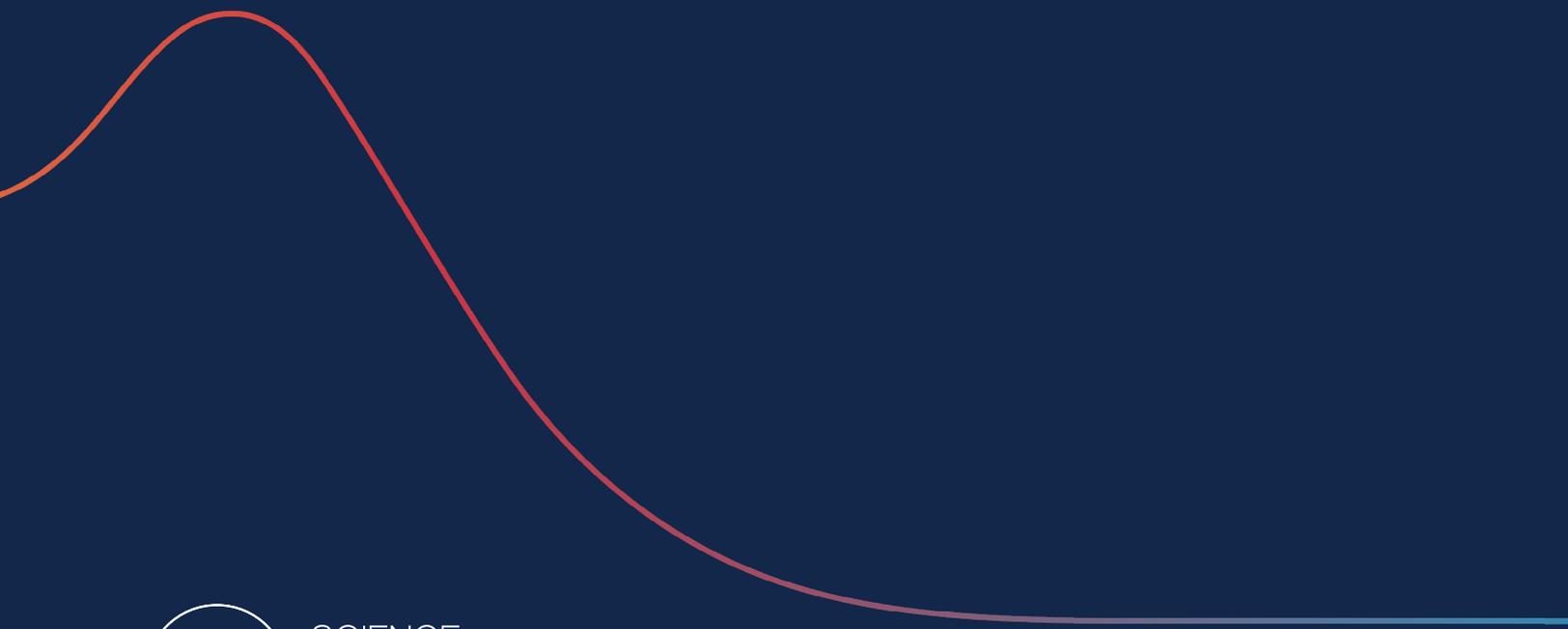
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