SCIENCE BASED TARGETS

SBTi Stakeholder Webinar on 1.5°C

Implications for science-based target setting

Nov, 2018

Science Based Targets | Welcome

Control Panel

Join audio:

- Choose **Mic & Speakers** to use VoIP
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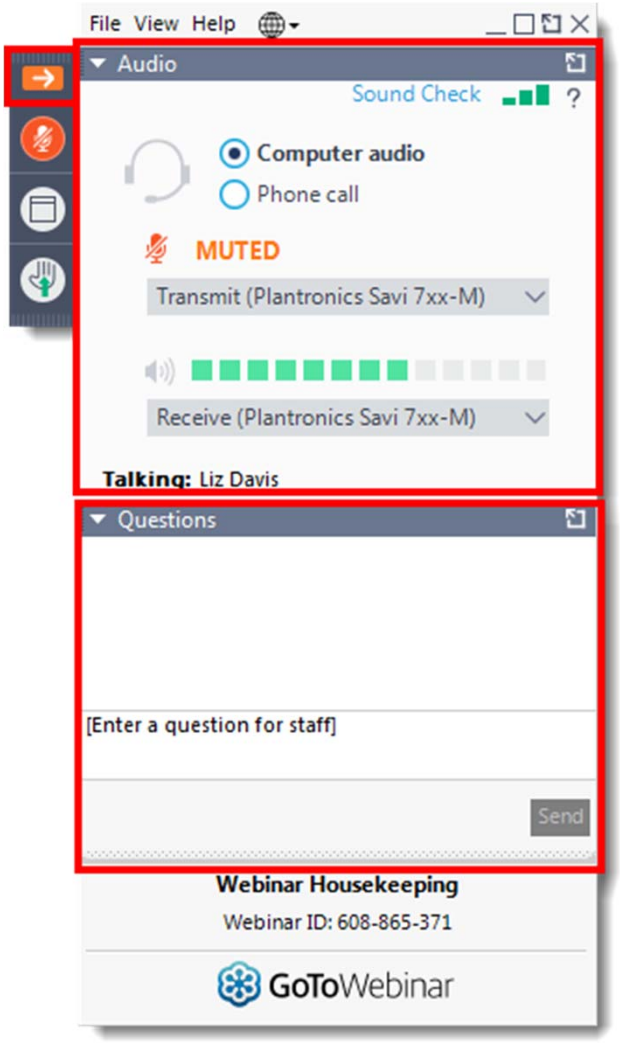
Submit questions and comments via the Questions panel

Note: Today's presentation is being recorded and will be provided within 48 hours.



Agenda

AGENDA ITEM	PRESENTED / MODERATED BY	TIME ALLOCATION
1. Welcome, agenda and introductions	**Alberto Carrillo**	**5 minutes**
2. Introduction to SBTi and science-based target setting	Alexander Farsan	10 minutes
3. IPCC SR15 takeaways and implications for science-based target setting	Alberto Carrillo	20 minutes
4. Transition, next steps and opportunities to provide feedback	Alexander Farsan	10 minutes
6. Q&A / Wrap up	---	15 minutes

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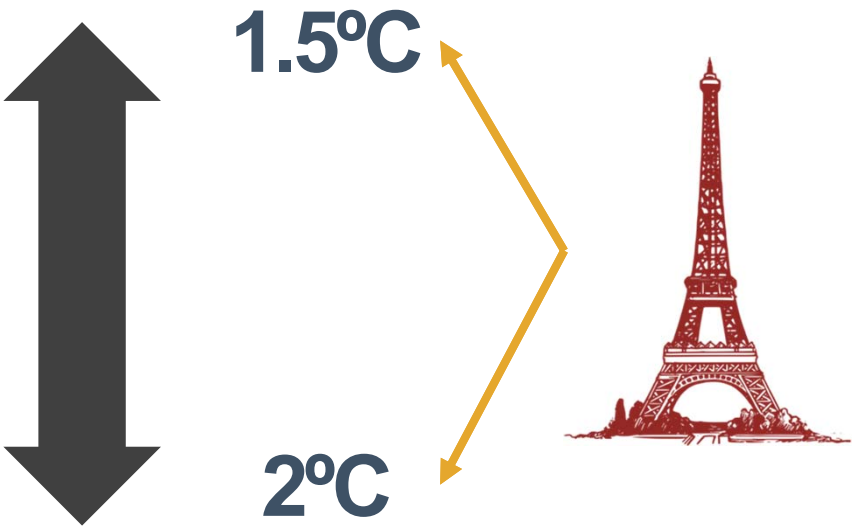
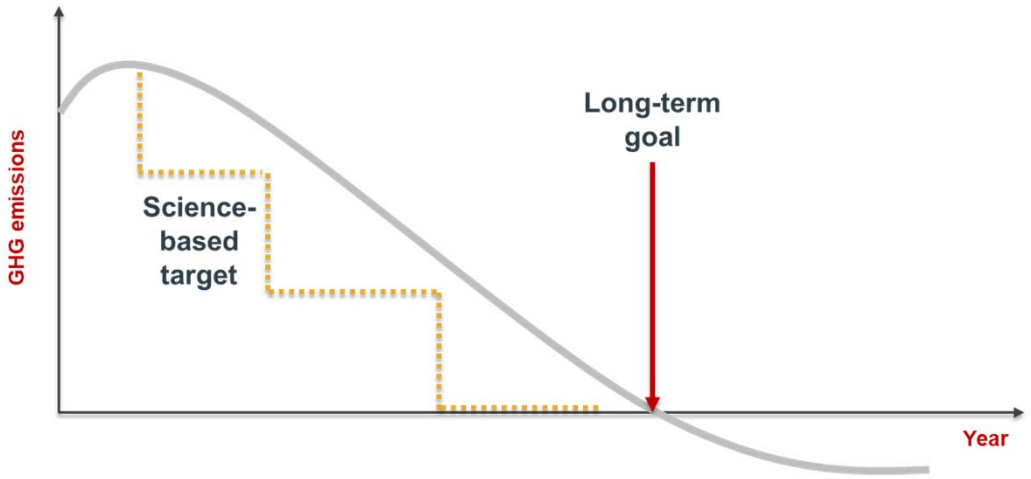
What are science-based targets?

GHG emissions reduction targets that are consistent with the level of decarbonization that, according to climate science, is required to keep global temperature increase within 1.5 to 2ºC compared to pre-industrial temperature levels".

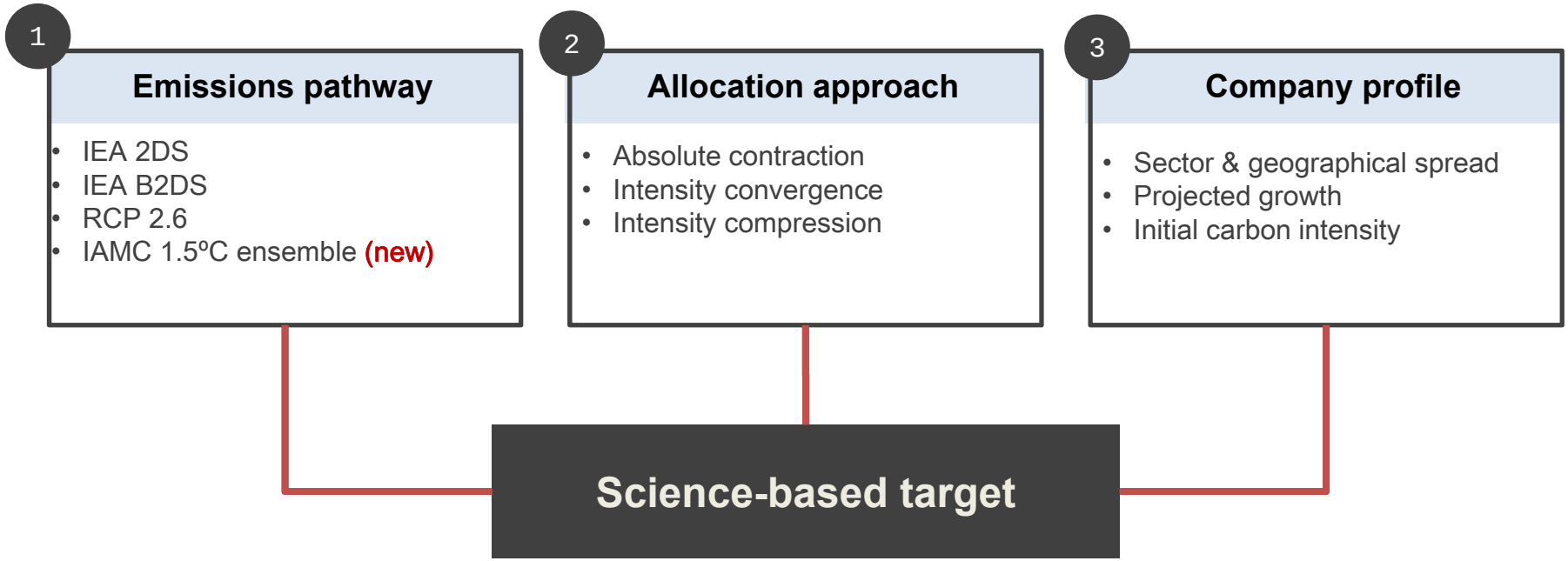


Science Based Targets | Introduction

- Consistent with the long-term goal of reaching net-zero emissions in the 2nd half of the century;
- Covering the most relevant sources of emissions within the corporate boundary (95% of direct and electricity-related emissions; 2/3 of value-chain emissions);
- Timeframe that drives short-term action and enables accountability (5 to 15 years).



Science Based Targets | Introduction



Science Based Targets | Introduction

Science Based Targets is an unprecedented collaboration between CDP, the UN Global Compact, the World Resources Institute, and WWF, in collaboration with the We Mean Business Coalition, providing a first-ever consistent vision and approach on how corporations can implement the ambition adopted in the Paris Agreement by setting and implementing ambitious GHG reduction targets that are consistent with the global goal of keeping global warming well below 2ºC.

Our vision: Science-based GHG emission reduction target setting will become standard business practice and corporations will play a critical role in the transition towards a net-zero economy.

Science Based Targets | Introduction

What do we do?

Build the technical foundations

Develop the technical groundwork required to facilitate the adoption of science-based targets in the corporate sector

Scale-up adoption

Build a critical mass of high-impact companies with science-based targets in key regions and sectors

Independent assessment

Provide independent assessment of targets, showcase early movers, and disseminate best practice.

Institutionalisation

Institutionalize the adoption of SBTs through the development of a standard, amplifying the adoption of SBTs through supply chains and investors, and embedding SBTs into the post-Paris climate architecture

Science Based Targets | Introduction

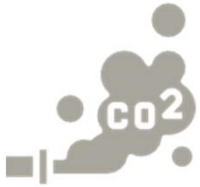
Status in the adoption of science-based target setting

~500 companies

are developing new business strategies that are aligned with climate science.

38 countries

these companies are headquartered in nearly 40 different countries and have operations all across the globe.



~700 MT CO_2

SBTi companies are directly responsible for ~700 MT CO2e, roughly equal to Canada's annual emissions.

+10 trillion USD

in market value, comparable to the value of the second largest stock exchange in the world, NASDAQ.

Join the movement!

Commit

Set your target

Submit it for independent validation

Announce your target

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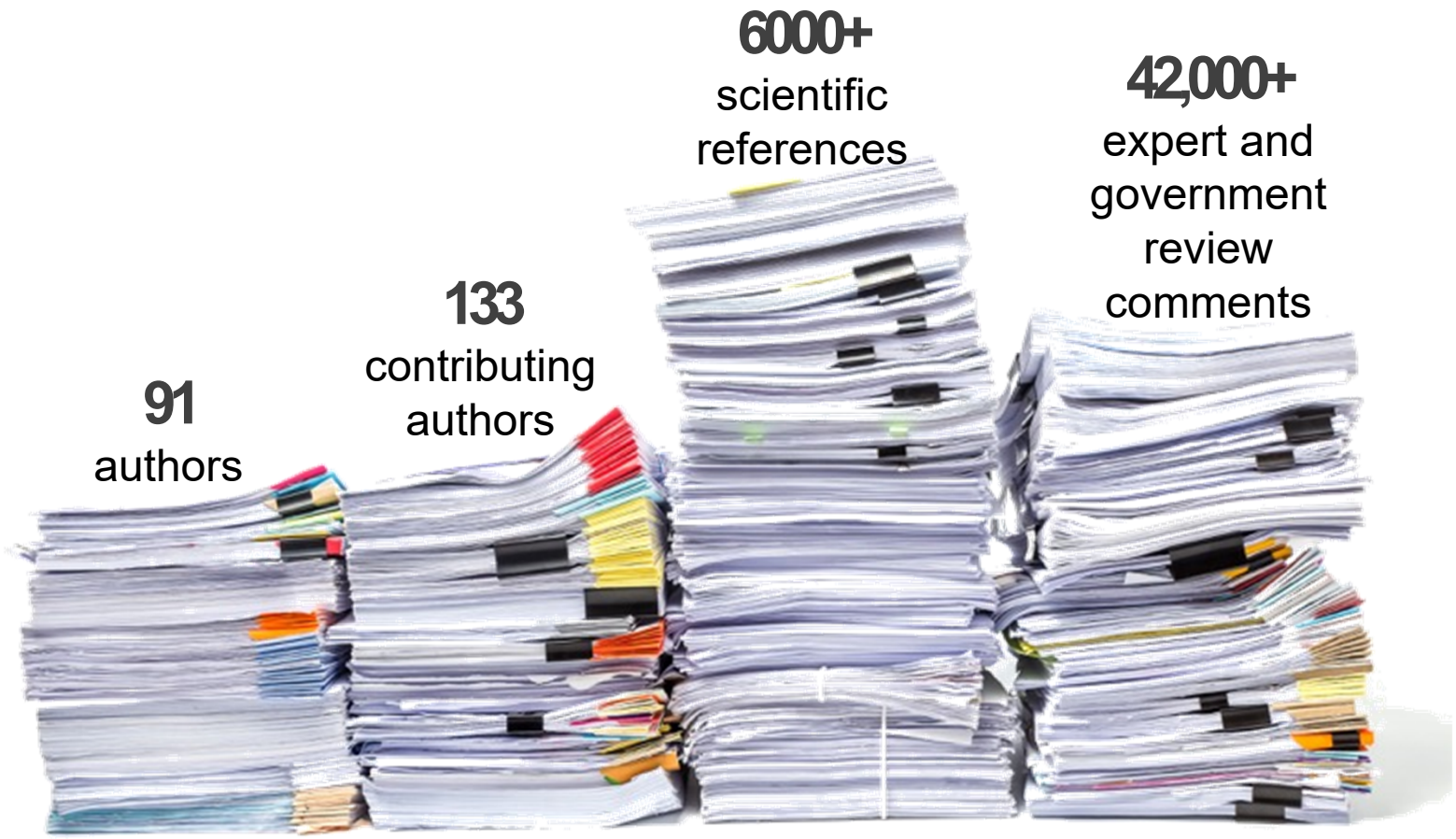
IPCC SR15 | Overview



IPCC SR15 | Overview

Impacts

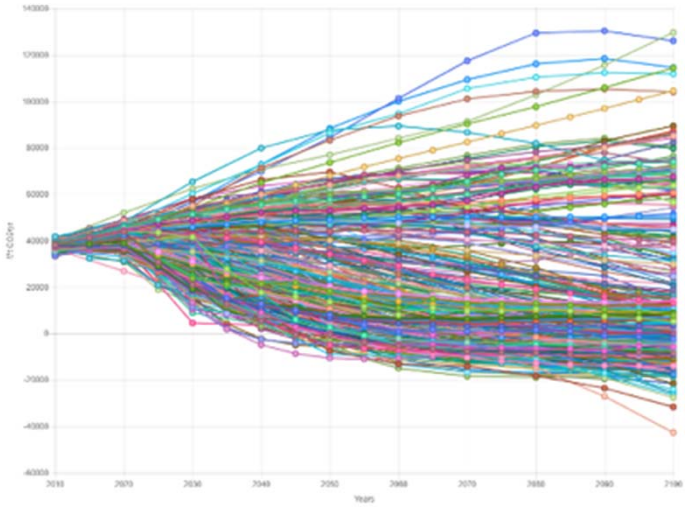
Selected impacts	1.5°C	2.0°C	2°C impacts
Global population exposed to severe heat at least once very 5 years	14%	37%	**2.6x** worse
Number of ice-free artic summers	At least one every 100 years	At least one every 10 years	**10x** worse
Reduction in maize harvest in tropics	3%	7%	**2.3x** worse
Further decline in coral reefs	70-90%	99%	Up to **29%** worse
Decline in marine fisheries	1.5 M tonnes	3 M tonnes	**2x** worse

Source: Levin, K. (2018, Oct 7). 8 Things You Need to Know About the IPCC 1.5˚C Report. Retrieved from https://www.wri.org/blog/2018/10/8-things-you-need-know-about-ipcc-15-c-report

IPCC SR15 | Overview

Transformation pathways

A significant number of mitigation pathways underpinning the IPCC SR15 have become available providing a greater understanding of greenhouse gas emission trajectories consistent with limiting warming to 1.5°C (and well below 2°C).



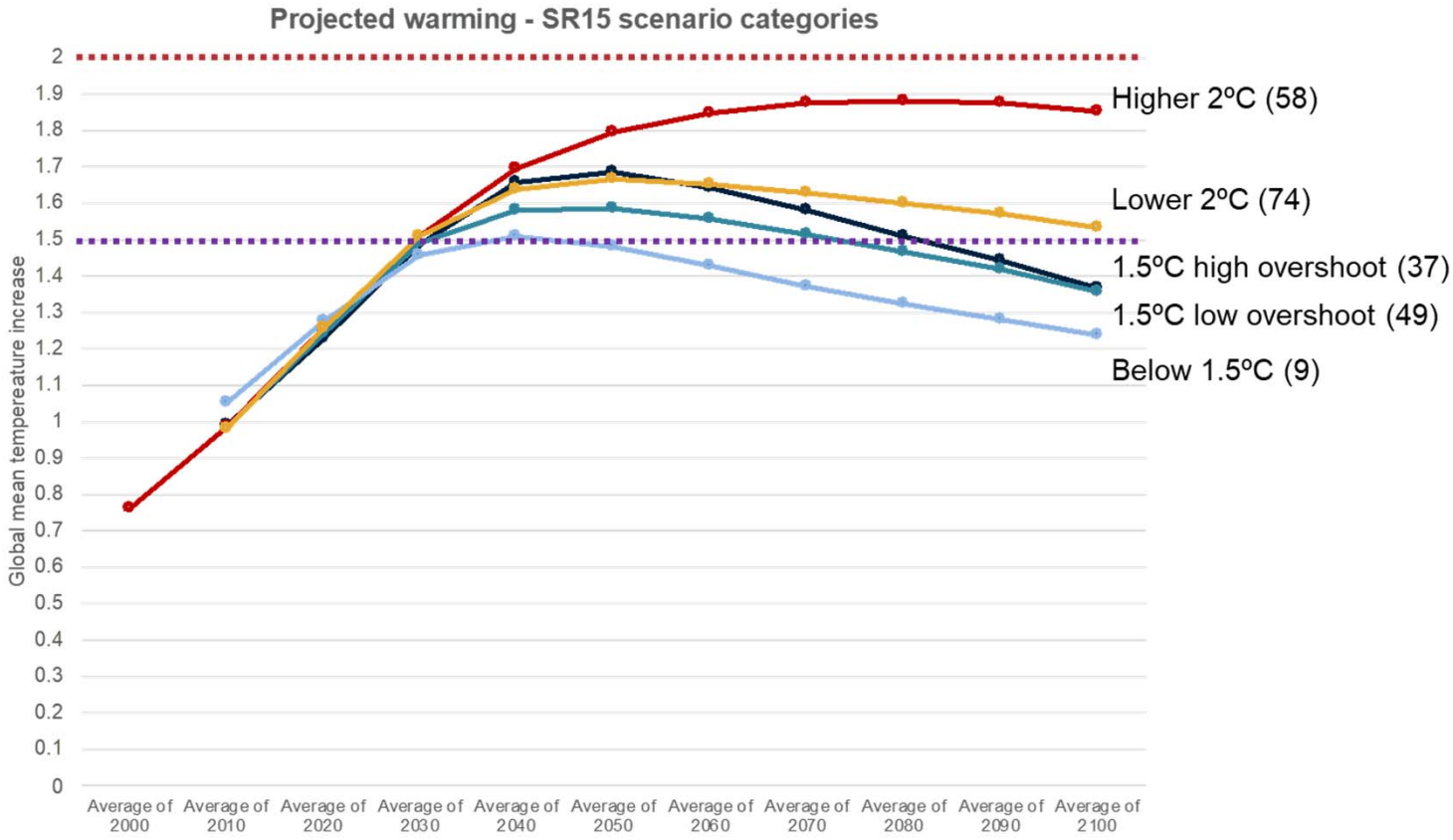
Source: IAMC 1.5°C Scenario Explorer and Data hosted by IIASA.

Selection of groups	Class name	No. of scenarios
1.5°C	Below 1.5°C	9
	1.5°C low overshoot	44
	1.5°C high overshoot	37
2°C	Lower 2°C	74
	Higher 2°C	58

Source: IPCC SR1.5; Chapter 2; Table 2.SM.11

IPCC SR15 | Overview

Transformation pathways



IPCC SR15 | Overview

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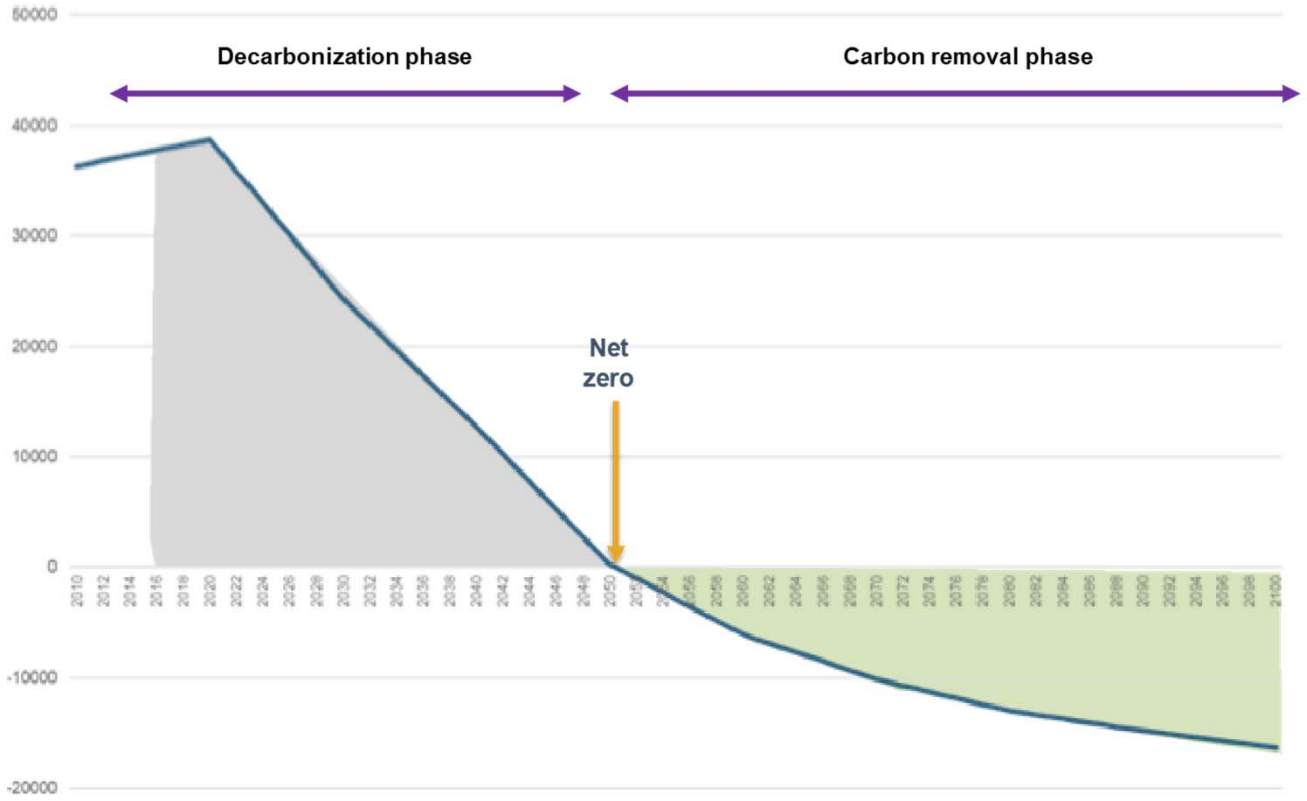

IPCC SR15 | Overview

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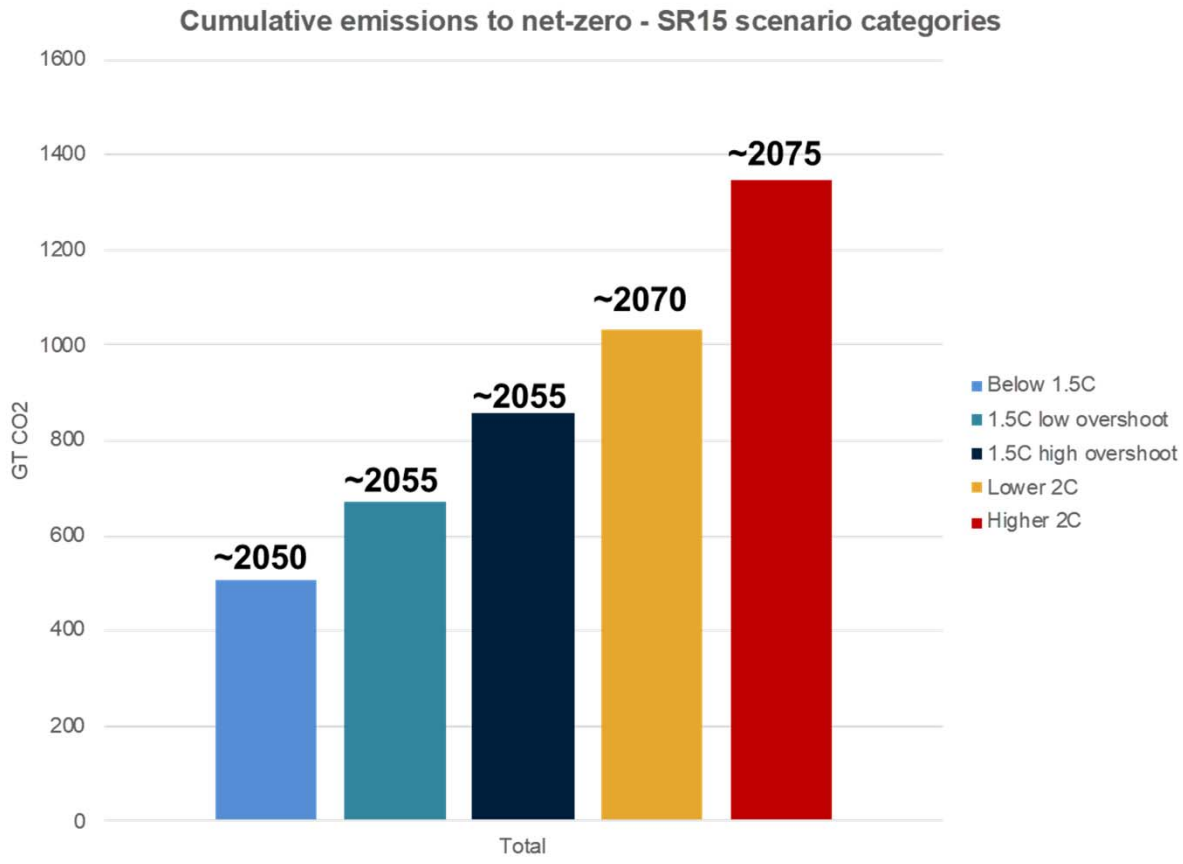
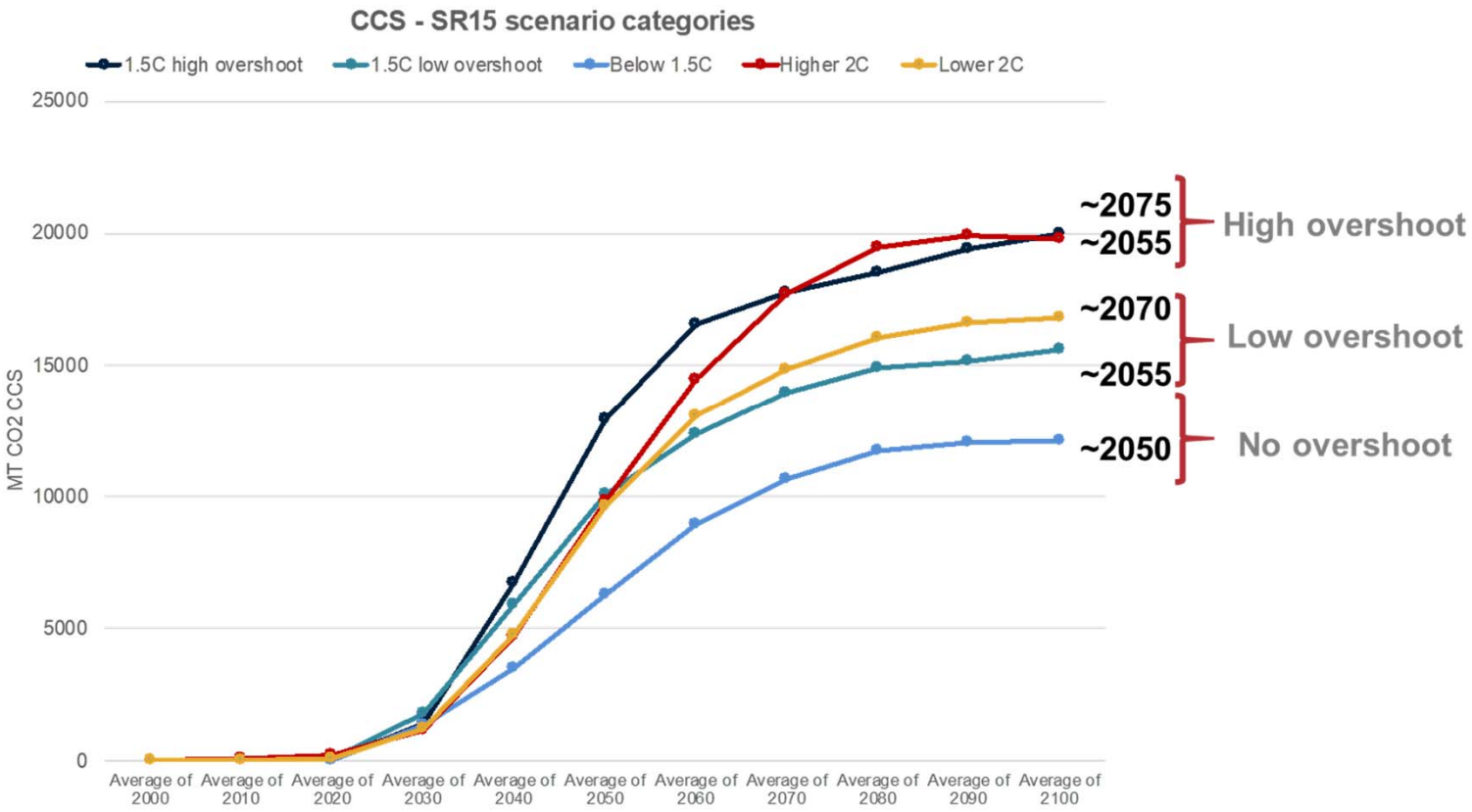


IPCC SR15 | Overview

Transformation pathways



IPCC SR15 | Overview

Key takeaways

1. According to the IPCC Special Report on 1.5°C, **reaching and sustaining net-zero** anthropogenic global emissions is necessary to halt anthropogenic global warming. Net-zero would have to be reached in the following timescales:
   - By ~**2050** to keep warming below 1.5°C
   - By ~**2070** to keep warming well-below 2°C

2. There are significant climate impacts in going above 1.5°C, some of which may be irreversible.

3. The longer it takes to reach net-zero emissions, the higher the reliance in carbon sequestration and carbon removal measures:
   - The feasibility of carbon removal at scale remains uncertain;
   - Possible additional mitigation costs in the longer-term;
   - Additional demand for land-use.

IPCC SR15 | Implications for science-based target setting

Research

What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

Program design

What does IPCC SR15 mean for the different areas of work under the SBTi?

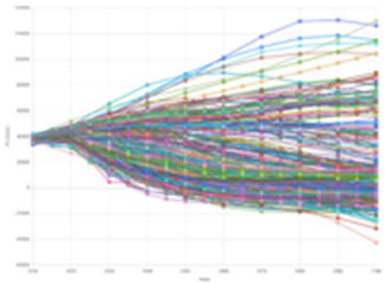
- Tools and guidance;
- Sectoral development;
- Criteria and target-validation protocols;
- Campaign.

IPCC SR15 | Implications for science-based target setting

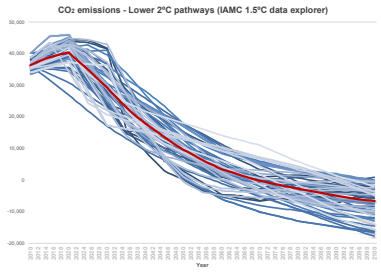
What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

What does IPCC SR15 mean for the SBTi?

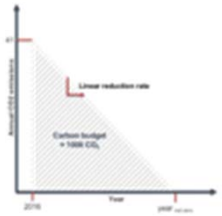
IAMC 1.5ºC ensemble



Sub-set of emission pathways based on proposed SBTi definitions



Determination of relevant parameters for science-based target setting



Incorporation into SBTi criteria, resources & guidelines

Consultation with SBTi Scientific Advisory Group

Consultation with SBTi Technical Advisory Group, Internal & External Stakeholders

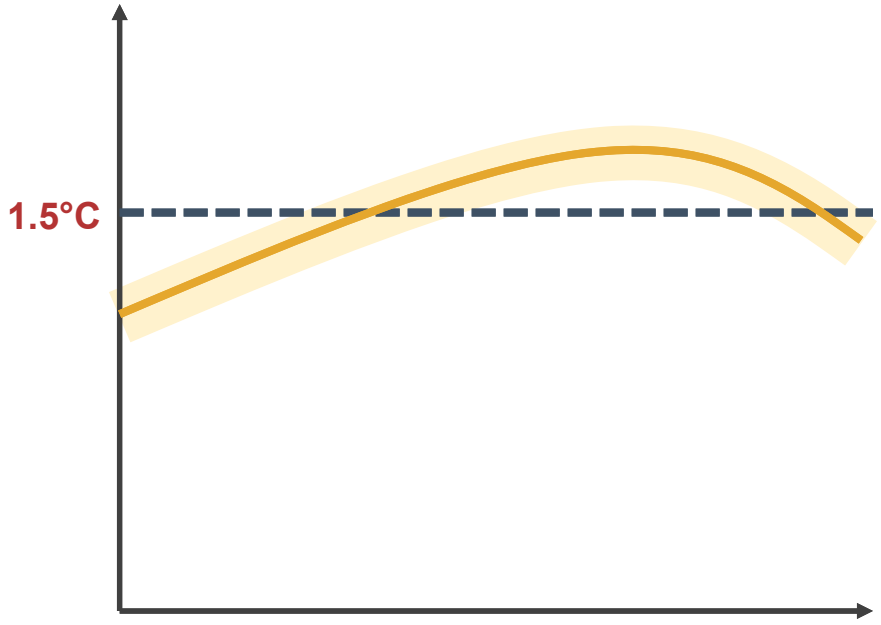
IPCC SR15 | Implications for science-based target setting

What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

In line with the goals set in the Paris Agreement and following the definitions and classification used in the IPCC 1.5°C Special Report, the SBTi considers 1.5ºC-consistent pathways, those that adhere to the following definition:

1.5°C-consistent pathway: A pathway of emissions of greenhouse gases and other climate forcers that, given current knowledge of the climate response, ensures that the following three conditions are met:

a) The pathway provides at least a 50% chance of global warming remaining below 1.5°C throughout the entire 21st century;
b) The pathway provides at least a 50% chance of global warming returning to 1.5°C by around 2100 following a temporary and low-magnitude overshoot;
c) The pathway reaches a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.



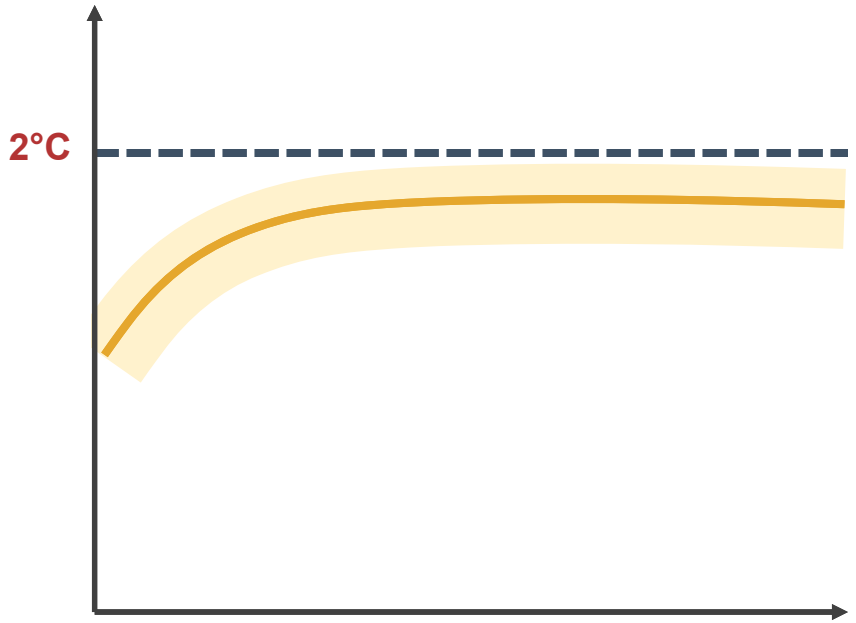
IPCC SR15 | Implications for science-based target setting

What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

In line with the goals set in the Paris Agreement and following the definitions and classification used in the IPCC 1.5°C Special Report, the SBTi considers well-below 2ºC-consistent pathways, those that adhere to the following definition:

Well-below 2°C-consistent pathway: A pathway of emissions of greenhouse gases and other climate forcers that, given current knowledge of the climate response, ensures that the following two conditions are met:

a) The pathway provides a 66% chance of global warming remaining below 2°C throughout the entire 21st century;
b) The pathway reaches a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century.

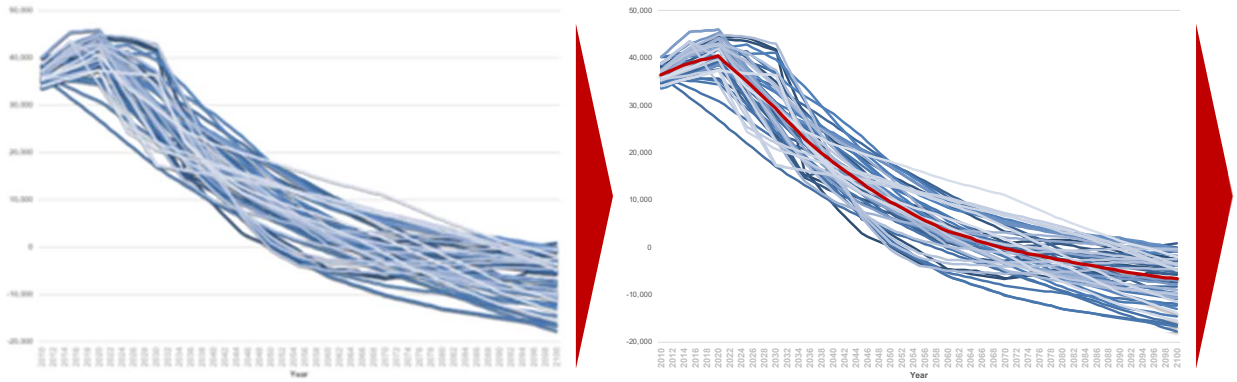


IPCC SR15 | Implications for science-based target setting

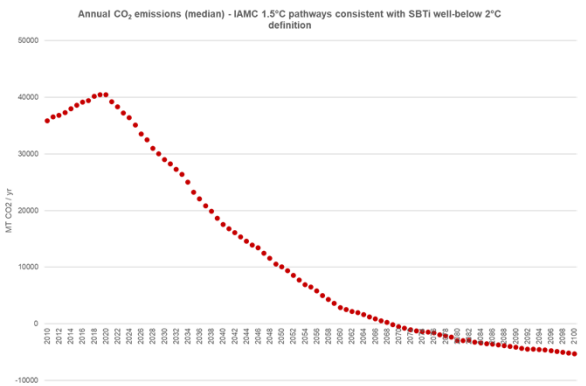
What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

For each temperature goal (i.e. 1.5°C and well-below 2°C), a “representative emission pathway” has been generated based on median annual emissions for the sub-set of scenarios that adhere to the proposed SBTi definitions. Representative emission pathways do not represent emissions for an individual scenario, and therefore, are not emission pathways in themselves. Instead, they represent an aggregation of annual emission values for the sub-set of scenarios that conform to the SBTi definitions.

Sub-set of SBTi-compliant scenarios



Representative Emissions Pathway

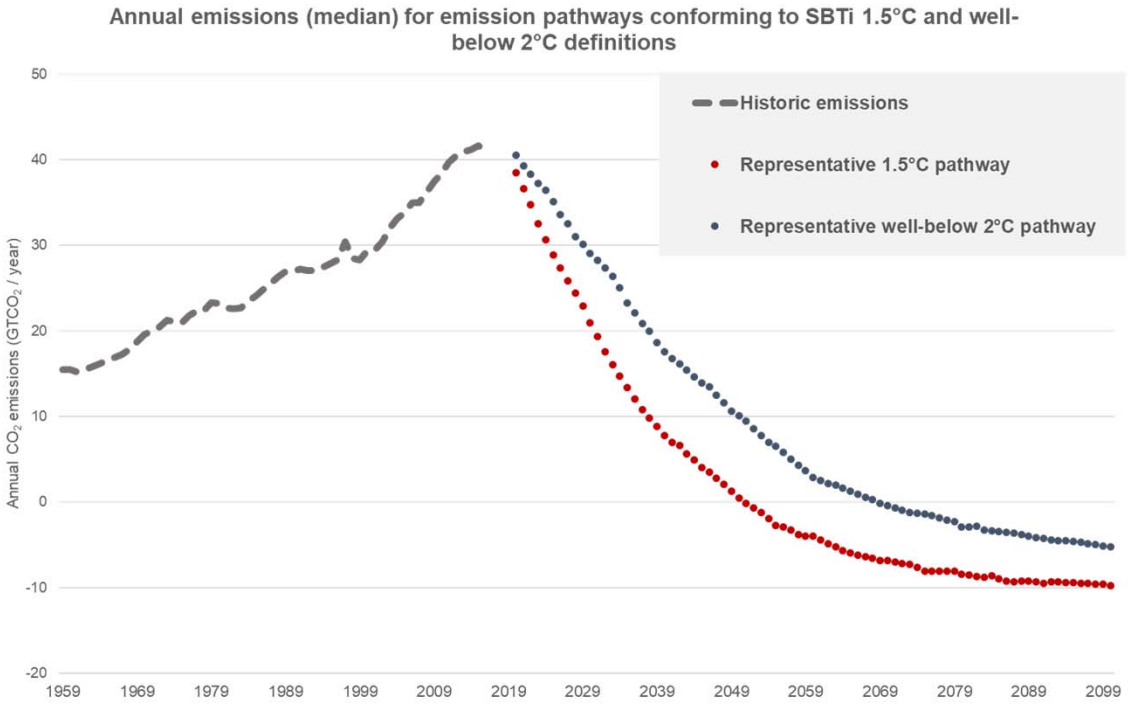


Representative emission pathway based on median annual emissions for the 55 pathways that conform to the SBTi definition of well-below 2°C pathways

IPCC SR15 I Implications for science-based target setting

What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

The chart on the right illustrates 1.5°C (red) and well-below 2°C (blue) representative emission pathways. Representative emission pathway are the basis for estimating relevant parameters for science-based target setting.



Sources: Own elaboration based on data from IAMC 1.5°C Scenario Explorer and Data hosted by IIASA and Global Carbon Project. (2017). Supplemental data of Global Carbon Budget 2017 (Version 1.0

IPCC SR15 | Implications for science-based target setting

What does an emission reduction target consistent with the ambition required to keep warming below 1.5°C / well-below 2°C look like?

Approach	Average annual reduction rate between 2016 and 2025		Average annual reduction rate between 2016 and 2030		Average annual reduction rate between 2020 and 2030	
	1.5ºC	Well-below 2ºC	1.5ºC	Well-below 2ºC	1.5ºC	Well-below 2ºC
Moving average reduction rate	3.1%	1.6%	3.6%	2.0%	4.8%	2.7%
Average reduction rate to net-zero*	3%	2%	3%	2%	3%	2%

*The values presented here represent the average annual reduction rate between the base year and the target year. For instance, for a ten-year target period between 2016 and 2025, companies would have to reduce 30% their 2016 emissions in order set a goal consistent with keeping global warming well-below 2°C.

IPCC SR15 | Implications for science-based target setting

What does the IPCC SR15 mean for the SBTi?

The SBTi defines science-based targets as “GHG emissions reduction targets that are consistent with the level of decarbonization that, according to climate science, is required to keep global temperature increase within 1.5 to 2ºC compared to pre-industrial temperature levels”

To date, the minimum level of ambition recognised by the SBTi has been defined according to two different approaches:

For absolute GHG emission reduction targets: the threshold has been set as the **minimum** annual average rate of reduction that would keep warming below 2°C as per the IPCC Fifth Assessment Report, limiting overshoot to less than 0.4 W / m^2;

For emissions intensity reduction targets: sector-specific thresholds have been derived from the 2DS scenario developed by the International Energy Agency. This pathway holds a 50% chance of keeping warming below 2°C;

IPCC SR15 | Implications for science-based target setting

What does the IPCC SR15 mean for the SBTi?

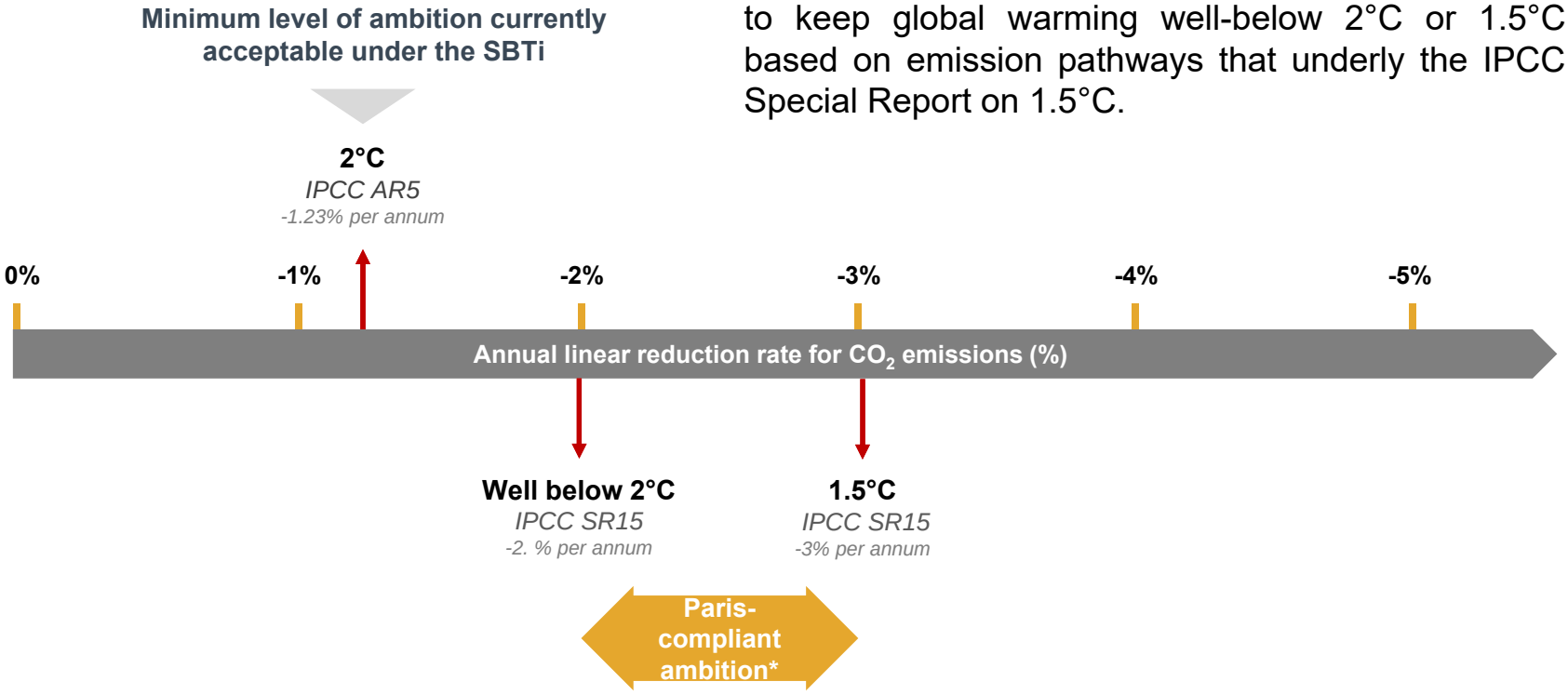
According to the IPCC Fifth Assessment Report, a reduction in GHG emissions of 49% to 72% (10th to 90th percentile) by 2050, compared to 2010 emissions, would lead to a temperature increase of 1.5°C to 1.7°C in 2100 and a probability of not exceeding 2°C greater than 66%, while limiting overshoot to less than 0.4 W/m^2. Based on this range, **1.23%** per year would be the minimum (10th percentile) annual average reduction rate that would keep warming below 2°C in line with the above criteria.

CO_2-equivalent concentration in 2100 (ppm CO_2eq)[3]	Subcategories	Cumulative CO_2 emissions[3] ($GtCO_2$)		CO_2eq. emissions in 2050 relative to 2010 (%)[4]	CO_2eq emissions in 2100 relative to 2010 (%)	Concentration (ppm)[5]		Temperature (relative to 1850–1900)[6, 7]				
		2011–2050	2011–2100			CO_2 in 2100	Peak CO_2eq.	2100 Temperature (°C)	Probability of Exceeding 1.5 °C (%)	Probability of Exceeding 2 °C (%)	Probability of Exceeding 3 °C (%)	Probability of Exceeding 4 °C (%)
430–480	Total range	550–1300	630–1180	−72 to −41	−118 to −78	390–435	465–530	1.5–1.7 (1.0–2.8)	49–86	12–37	1–3	0–1
	Overshoot < 0.4 W/m²	*550–1030*	*630–1180*	*−72 to −49*	*−94 to −78*	*390–435*	*465–500*	*1.5–1.7 (1.0–2.6)*	*49–72*	*12–22*	*1–2*	*0–0*
	Overshoot > 0.4 W/m²	*920–1300*	*670–1180*	*−66 to −41*	*−118 to −103*	*400–435*	*505–530*	*1.6–1.7 (1.1–2.8)*	*76–86*	*22–37*	*1–3*	*0–1*
480–530	Total range	860–1600	960–1550	−57 to 4[8]	−179 to −127	425–460	505–575	1.7–2.1 (1.2–3.3)	80–96	32–61	3–10	0–2
	Overshoot < 0.4 W/m²	*870–1240*	*960–1490*	*−57 to −42*	*−103 to −76*	*425–460*	*505–560*	*1.8–2.0 (1.2–3.2)*	*81–94*	*32–56*	*3–10*	*0–2*
	Overshoot > 0.4 W/m²	*1060–1600*	*1020–1500*	*−54 to 4[8]*	*−179 to −98*	*425–460*	*530–575*	*1.8–2.1 (1.2–3.3)*	*86–96*	*38–61*	*3–10*	*1–2*
	No exceedance of 530ppm CO_2eq	*860–1180*	*960–1430*	*−57 to −42*	*−107 to −73*	*425–455*	*505–530*	*1.7–1.9 (1.2–2.9)*	*80–87*	*32–40*	*3–4*	*0–1*
	Exceedance of 530ppm CO_2eq	*1130–1530*	*990–1550*	*−55 to −25*	*−114 to −90*	*425–460*	*535–575*	*1.8–2.0 (1.2–3.3)*	*88–96*	*39–61*	*4–10*	*1–2*
530–580	Total range	1070–1780	1170–2240	−47 to 7	−184 to −59	425–520	540–640	2.0–2.3 (1.4–3.6)	93–99	54–84	8–19	1–3
	Overshoot < 0.4 W/m²	*1090–1490*	*1400–2190*	*−47 to −12*	*−86 to −60*	*465–520*	*545–585*	*2.0–2.2 (1.4–3.6)*	*93–96*	*55–71*	*8–14*	*1–2*
	Overshoot > 0.4 W/m²	*1540–1780*	*1170–2080*	*−7 to 7*	*−184 to −98*	*425–505*	*590–640*	*2.1–2.2 (1.4–3.6)*	*95–99*	*63–84*	*8–19*	*1–3*
	No exceedance of 580ppm CO_2eq	*1070–1460*	*1240–2240*	*−47 to −19*	*−81 to −59*	*450–520*	*540–575*	*2.0–2.2 (1.4–3.6)*	*93–95*	*54–70*	*8–13*	*1–2*
	Exceedance of 580ppm CO_2eq	*1420–1750*	*1170–2100*	*−16 to 7*	*−183 to −86*	*425–510*	*585–640*	*2.1–2.3 (1.4–3.6)*	*95–99*	*66–84*	*8–19*	*1–3*
580–650	Total range	1260–1640	1870–2440	−38 to 24	−134 to −50	500–545	585–690	2.3–2.6 (1.5–4.2)	96–100	74–93	14–35	2–8
650–720	Total range	1310–1750	2570–3340	−11 to 17	−54 to −21	565–615	645–710	2.6–2.9 (1.8–4.5)	99–100	88–95	26–43	4–10
720–1000	Total range	1570–1940	3620–4990	18 to 54	−7 to 72	645–780	765–935	3.1–3.7 (2.1–5.8)	100–100	97–100	55–83	14–39
> 1000	Total range	1840–2310	5350–7010	52 to 95	74 to 178	810–975	1075–1285	4.1–4.8 (2.8–7.8)	100–100	100–100	92–98	53–78

Source: IPCC AR5; WG3: Chapter 6; Table 6.3

IPCC SR15 | Implications for science-based target setting

The minimum linear decarbonisation rate acceptable under the SBTi (derived from IPCC AR5), is not compatible with the level of decarbonisation required to keep global warming well-below 2°C or 1.5°C based on emission pathways that underly the IPCC Special Report on 1.5°C.



*Based on preliminary analysis by the SBTi

IPCC SR15 | Implications for science-based target setting

In response to the IPCC SR15, the Science Based Targets initiative is exploring a number of measures that include:

1. **Greater transparency about the science behind science-based targets:** We are working on a document that will provide clarity and transparency on the science and choices behind the level of ambition and methods eligible under the SBTi. This paper will be discussed and consulted with the recently created Scientific Advisory Group and will be made available on our website;

2. **Enhancing ambition:** We are exploring updating ambition eligible under the SBTi call-to-action based on the IPCC SR15. These updates would be reflected in the upcoming update to the SBTi eligibility criteria and validation protocols (Jan, 2019);

3. **Disclosing ambition for approved targets:** We are exploring to introduce a process to disclose the level of ambition of approved targets (e.g. 1.5°C; well-below 2°C and 2°C). This differentiation may apply to previously approved targets and to new targets;

4. **Updating our guidance technical resources:** We will develop a second generation of science-based target setting resources (guidance, tool, etc.) that will incorporate the latest science.

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3. IPCC SR15 takeaways and implications for science-based target setting	Alberto Carrillo	20 minutes
4. Transition, next steps and opportunities to provide feedback	**Alexander Farsan**	**10 minutes**
6. Q&A / Wrap up	---	15 minutes

Key decisions | Scenarios being explored

Category	Current scenario	Options being explored
Minimum ambition	Minimum ambition in line with 2°C	a) Continue with current level of ambition; b) Increase minimum ambition to well-below 2°C; c) Increase minimum ambition to 1.5°C
Grace period	New criteria applicable from April 15, 2019	a) Additional grace period of 6 months; b) Additional grace period of 12 months; c) Additional grace period of 18 months;
Disclosure of ambition	The SBTi does not disclose the level of ambition of approved targets	a) Disclosure of ambition of approved targets b) Continuation of current scenario
Target re-calibration	The SBTi recommends regular review of targets, but they are not mandatory for all targets. The original approval of a target is valid until the target expires.	a) Mandatory review of targets against latest criteria every 5 years b) Continuation of current scenario

Key decisions I How to provide feedback?

Please provide feedback by the 30th of November:

https://sciencebasedtargets.org/1o5consultation/

Key decisions I Next steps

Planning	2018									2019				
	Nov					Dec				Jan				
	29-02	05-09	12-16	19-23	26-30	03-07	10-14	17-21	24-28	31-04	07-11	14-18	21-25	28-01
Milestones														
Consultation with Scientific Advisory Group (TBC)														
Public consultation														
Public announcement of changes to the SBTi criteria, validation process and technical resources														

Agenda

AGENDA ITEM	PRESENTED / MODERATED BY	TIME ALLOCATION
1. Welcome, agenda and introductions	Alberto Carrillo	5 minutes
2. Introduction to SBTi and science-based target setting	Alexander Farsan	10 minutes
3. IPCC SR15 takeaways and implications for science-based target setting	Alberto Carrillo	20 minutes
4. Transition, next steps and opportunities to provide feedback	Alexander Farsan	10 minutes
6. Q&A / Wrap up	**---**	**15 minutes**

SCIENCE BASED TARGETS

SBTi Stakeholder Webinar on 1.5°C

Implications for science-based target setting

Nov, 2018