

INTRODUCING THE SBTi BUILDINGS GUIDANCE AND TOOL FOR PILOT TESTING

PILOT LAUNCH WEBINAR

21 November 2023

Partner organizations



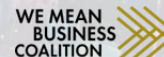
United Nations
Global Compact



WORLD
RESOURCES
INSTITUTE



In collaboration with

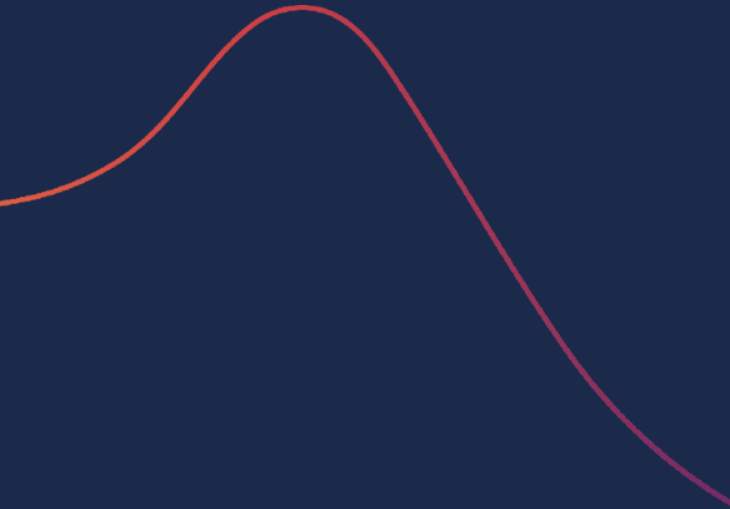


VIDEO-CONFERENCE GUIDELINES

- 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
 2. Opening remarks
 3. Introduction to the SBTi
 4. The SBTi Buildings Guidance draft for pilot testing
 - In-use emissions pathways
 - Embodied emissions pathways
 - Key criteria and considerations
 - Pilot testing
 5. Q&A session
 6. Closing remarks
-

TODAY'S WEBINAR TEAM



KARL DOWNEY
Head of Sectoral
Development
SBTi



AYLA DINÇAY
Buildings Lead
SBTi



KENZA TAOUFIK
Europe Regional Lead
SBTi
(1st Session)



AAMIR KHAN
Sr. Project Officer
SBTi



PAULINA MORENO
Communications
Manager
SBTi



PAULINA TARRANT
Stakeholder Engagement
Sr. Manager
SBTi
(2nd Session)



JULIA WEIN
Project Lead
CRREM
(1st Session)



SVEN BIENERT
Head of CRREM
CRREM
(2nd Session)



MATTEO CASPANI
Senior Consultant
Ramboll

PILOT TESTING OF THE SBTi BUILDINGS GUIDANCE AND TOOL

OPENING REMARKS



Alberto Carrillo Pineda

Chief Technical Officer
SBTi

INTRODUCTION TO THE SBTi

WHAT IS THE SCIENCE BASED TARGETS INITIATIVE?



DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

The Science Based Targets initiative (SBTi) drives **ambitious corporate climate action** by enabling businesses and financial institutions globally to set **science-based greenhouse gas emissions reduction targets**.

Founding Partners



United Nations
Global Compact



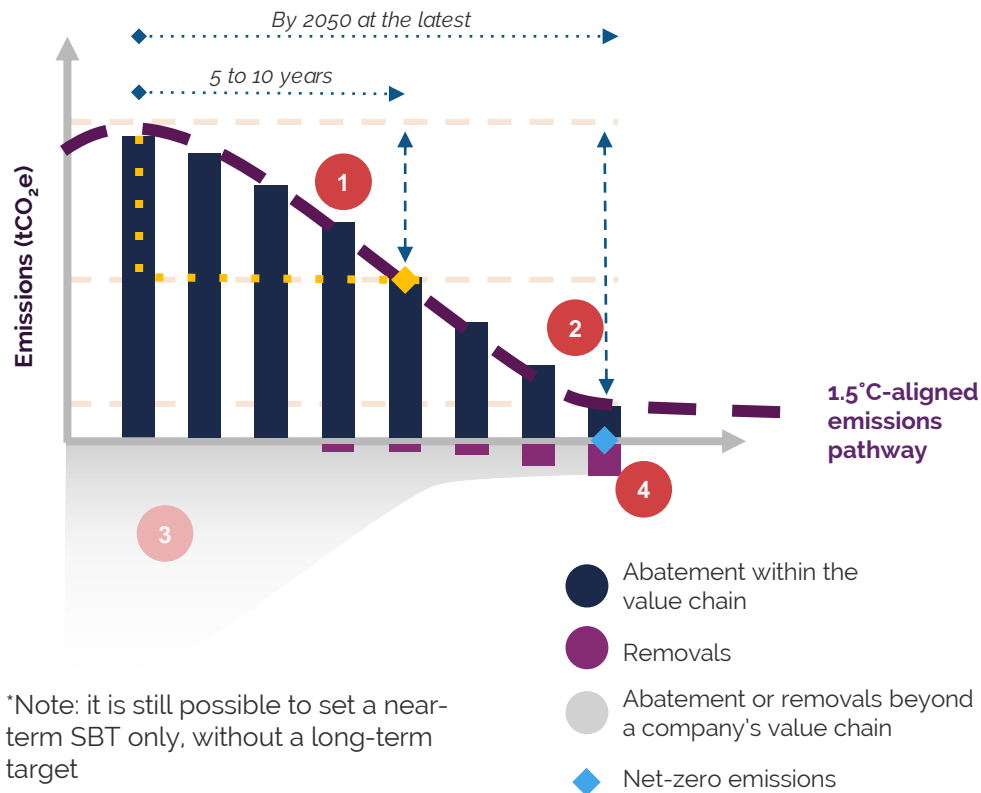
WORLD
RESOURCES
INSTITUTE



In collaboration with



THE NET-ZERO STANDARD FRAMEWORK



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.



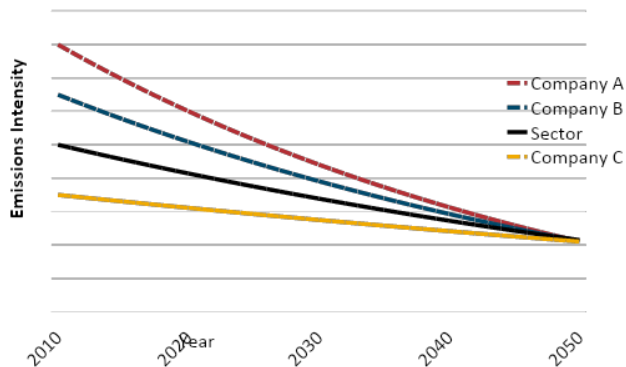
Required



Recommended

TARGET-SETTING APPROACHES

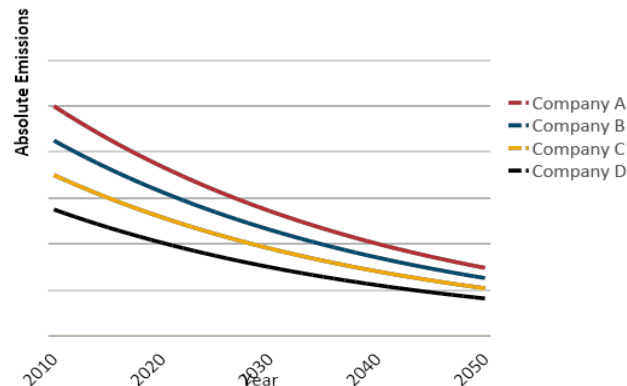
Carbon **intensity** convergence / Sectoral Decarbonisation Approach (SDA)



Homogeneous sectors:

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

Carbon emissions **contraction**



Heterogeneous sectors:

- Other industry

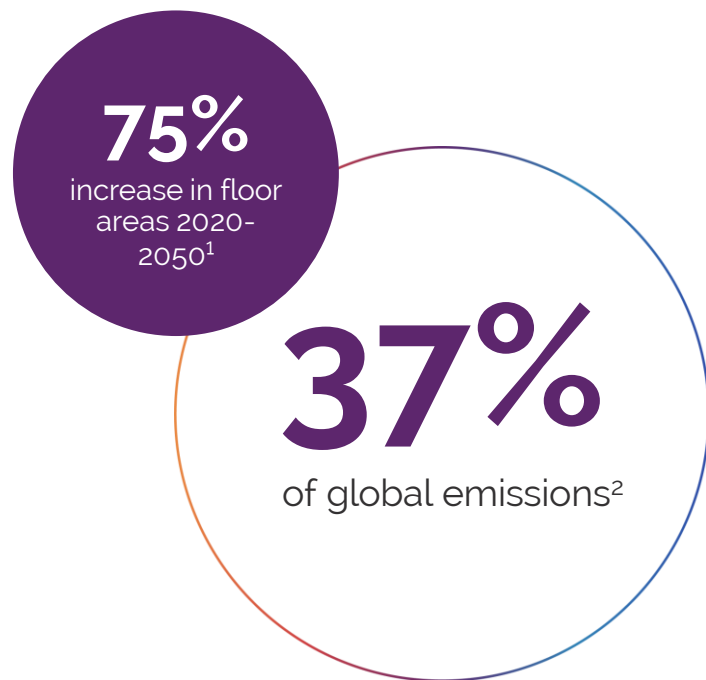
An absolute contraction target for 1.5°C requires a minimum 4.2% linear annual reduction or a 42% reduction over 2020-2030, whichever is higher.

THE SBTi BUILDINGS PROJECT

Poll #2

DECARBONIZING BUILDINGS IS CRUCIAL

- Today, the built environment is a **major contributor of emissions** globally.
- Simultaneously, **global floor area** is projected to increase significantly by 2050.
- Climate change affects the industry, **causing physical damage and risks** already.
- **Immediate climate action is needed** to accelerate the transformation to the net-zero economy.



¹ Source: [IEA, 2022](#).

² Source: [GABC, 2022](#)

PARTNERS

Technical Partners

- CRREM: 1.5°C in-use operational pathways.
- Ramboll: 1.5°C embodied pathways.
- PwC: guidance development.
- dss+: tool development.



Funding

The SBTi would like to thank Laudes Foundation for funding this project.

Laudes ———
——— Foundation

SBTi BUILDINGS PROJECT - EXPERT ADVISORY GROUP

AECOM	Council on Energy, Environment, and Water (CEEW)	Ramboll
Aldar	Environmental Coalition on Standards (ECOS)	Simon Property Group
APG	European Climate Foundation (ECF)	Skanska
Arup	Finance Ideas	Swire Properties
Better Buildings Partnership (BBP)	Global Real Estate Sustainability Benchmark (GRESB)	The European Network of Construction Companies for Research and Development (ENCORD)
Bouygues	Green Building Design Group	University of Regensburg
BRE	Green Finance Institute	University of Strathclyde
Buro Happold	JLL	World Business Council for Sustainable Development (WBCSD)
CapitaLand Investment	Mitsubishi Estate Co.	World Green Building Council (WGBC)
CBRE	Multiplex	World Wide Fund for Nature (WWF)
Climate Bonds Initiative	Partnership for Carbon Accounting Financials (PCAF)	International Finance Corporation (IFC)

IN-USE EMISSIONS PATHWAYS

Close
Poll #2



THE CRREM-SBTi ALIGNED DECARBONIZATION PATHWAYS FOR REAL ESTATE

WHAT IS CRREM?

Laudes —
— Foundation



The Carbon Risk Real Estate Monitor (CRREM) provides the real estate industry with **transparent, science-based decarbonization pathways** aligned with the Paris Climate Goals of **limiting global temperature rise to 2°C, with ambition towards 1.5°C**. CRREM considers both **operational carbon and energy intensities**.



- ... evaluates and tracks **operational** carbon/energy.
- ... differentiates performance targets based on **use and location**.
- ... provides pathways for both **carbon and energy intensity**.
- ... pushes for **global alignment** with other sectors / approaches / initiatives.
- ... is a **whole building** approach to holistically evaluation asset decarbonization.
- ... uses straightforward **intensity KPIs** (per SqFt, SqM) for tracking.



THE CRREM STORY SO FAR

<https://www.crrem.eu>

Laudes
Foundation



CRREM PATHWAYS V2 – NOW AVAILABLE!

Sources available

Public Consultation confirms the updated CRREM & The SBTi Aligned Decarbonisation Pathways for the In-Use Phase of Real Estate! Download the new Global pathways, Methodology documentation & CRREM Feedback Report:



2018

First Pathway
Release



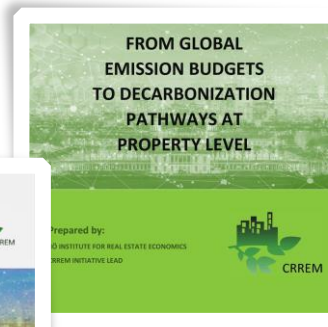
2022

Second
Pathway
Release



PROJECT LAUNCH

PUBLIC CONSULTATION



NECESSARY STEPS FOR THIS APPROACH ARE...

A

GLOBAL DECARBONISATION PATHWAY 2020 - 2050

1. Remaining anthropogenic global budget & ambition level (1.5°C)
2. Deriving the real estate share
3. Defining CO₂ only and GHG total for global buildings
4. Data input for the intensity pathways:
 - Floor area & growth rates
 - Whole building emissions
 - Weighted EF (grid decarbonization & DH etc.)
 - Property related other GHG (foremost F-gases)

B

COUNTRY SPECIFIC DECARBONISATION PATHWAYS

1. Methodology: using the SDA convergence approach
2. Define country floor area per segment (Resi / CRE)
3. Define country final energy consumption per segment
4. Derive CRE / Resi average starting figures in kwh
5. Define energy-mix & weighted EF in base year
6. Derive CO₂ intensity starting figures and apply SDA

D

COUNTRY- & PROPERTY-TYPE EUI PATHWAY

1. Derive Energy-intensity pathway via defined country- and property-type specific carbon-intensity pathway
2. Starting point for EUI intensity was defined in B & C
3. Derive weighted EF development until 2050
4. Convert carbon intensities in kwh intensities (account for renewables with zero emission)

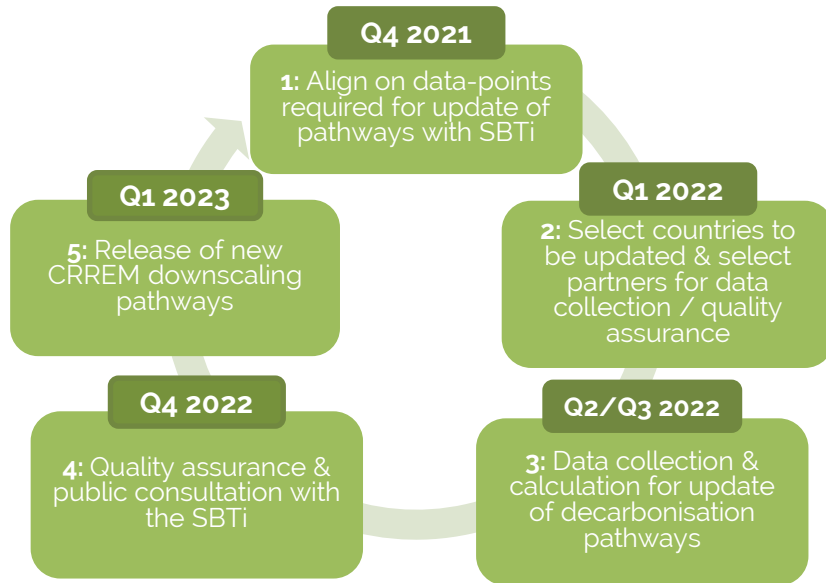
C

USE-TYPE SPECIFIC DECARBONISATION PATHWAYS

1. Define sub use-types (e.g. Retail, Office, Logistic etc.)
2. Define kWh/m² starting values
3. Define use-type specific energy-mix
4. Derive a specific weighted EF in base year
5. Derive sub-use decarbonization pathways via CRE pathway

PROCESS FOR RELEASE & UNDERLYING DATA

PROCESS FOR THE UPDATE OF THE CRREM DECARBONIZATION PATHWAYS WITH THE SBTi



CRREM PATHWAYS: Top-down downscaling

World Data:

- **NEW** Global budget:
 - IEA, IPCC

Individual Country Data (Commercial):

- **Energy Intensity** for the "whole-building" (kWh/m²/pa)
- Country average **emission factors** (EFs)
- **EF Development**
- **Energy-mix** & Development
- **Building Stock** (Commercial) &
- Building Stock **growth rate**

Real Estate Sub-sectors Data:

- Energy-intensity (kWh/m²/pa)
- EF & EF Development
- Energy-mix & Development
- Building Stock (Residential) &
- Building Stock growth rate

ENHANCING GRANULARITY

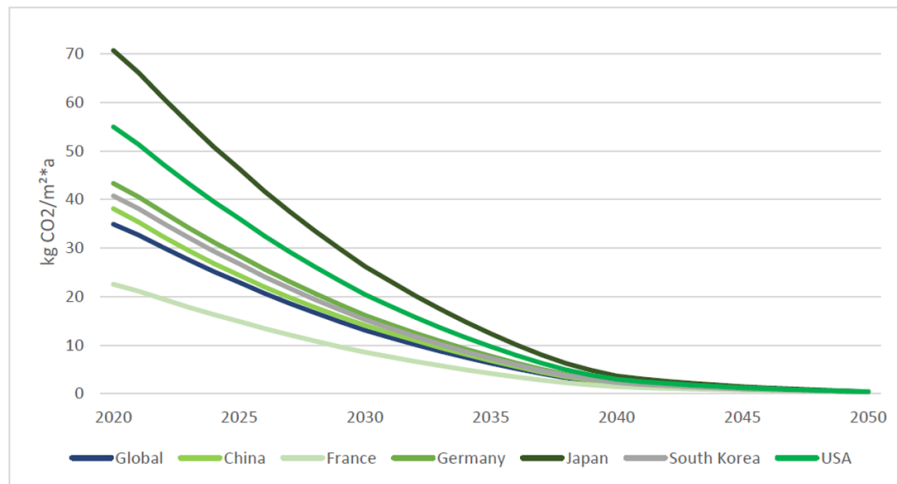
NEW UPDATE

Laudes
Foundation



Some highlights:

- **More data partners:** for specific data. Partners include: CSR design, UKGBC, Australia GBC, etc.
- **Year:** New baseline year 2020 (2018 previously).
- **New property-type:** Industrial Dist. Warehouse Cooled & Industrial Dist. Warehouse Warm.
- **Further granularity on regions:** Further sub regions have been included for the USA as well as Australia (due to the country area/size).
- **New GHG-pathway:** New CO₂ & CO₂"e" pathways for correct benchmarking.





SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

EMBODIED EMISSIONS PATHWAYS



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

A 1.5°C PATHWAY FOR THE GLOBAL BUILDINGS SECTOR'S EMBODIED EMISSIONS | RAMBOLL

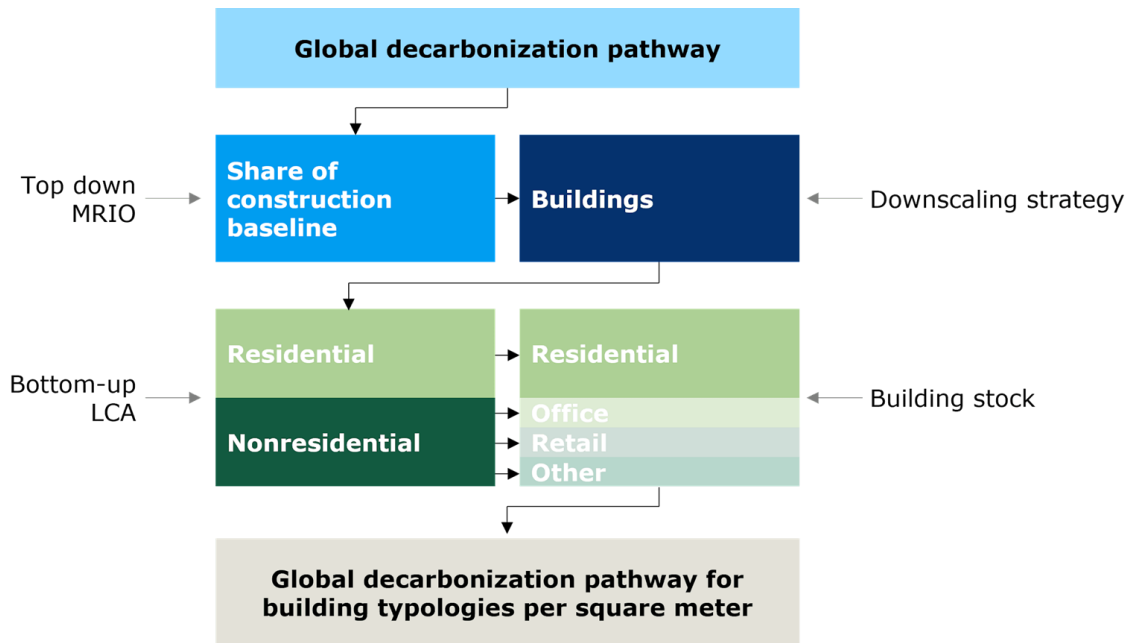
OUR APPROACH

We define a reference pathway:

- Aligned with SBTi fundamentals
- New construction
- Upfront emissions
- Absolute emissions pathway
- Intensity target
- Intensity metric CO₂eq/m²

Alternative options are also provided:

- Absolute emissions target (in % reduction of carbon footprint)
- Combined pathway for new construction and renovation



KEY ELEMENTS AND DATA SOURCES FOR A SCIENCE-BASED DECARBONIZATION PATHWAY FOR UPFRONT EMBODIED EMISSIONS (I)

Global carbon budget and decarbonization pathway

- IPCC AR6
- Median of pathways for 1.5°C with no or little overshoot ("C1")

Data on construction emissions

- Exiobase version 3.8.2
- Multi-Regional Input-Output Model that provides information on the environmental impacts of economic activities across regions and sectors

Downscaling strategy

- Identify the appropriate share of buildings' embodied emissions out of the entire global carbon budget

Downscaling approach	Allocated share for new building construction
Grandfathering	10.2%
Economic value added	6.6%
Equal per capita and utilitarian	9.2%

Source: Own calculations based on Exiobase

KEY ELEMENTS AND DATA SOURCES FOR A SCIENCE-BASED DECARBONIZATION PATHWAY FOR UPFRONT EMBODIED EMISSIONS (II)

Bottom-up LCA data

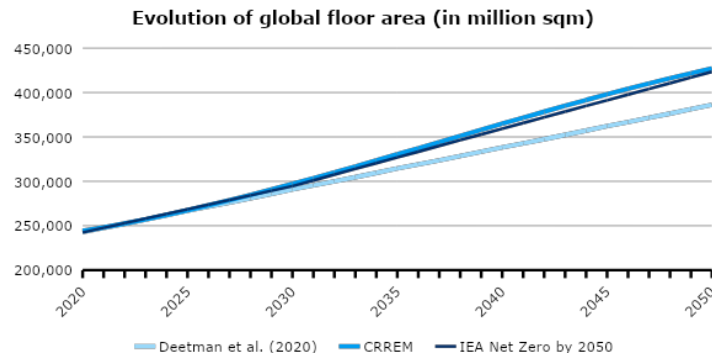
- Informs the status quo of upfront embodied carbon levels for the different building types

Average CO ₂ eq emission	kg CO ₂ eq / m ²
Residential	407.9
Offices (an assumed representative for other non-residential typologies)	572.4

Source: Röck, M. et al. (2020). Embodied GHG emissions of buildings – The hidden challenge for effective climate change mitigation. <https://doi.org/10.1016/j.apenergy.2019.114107>.

Building stock development

- Projected global floor area growth
- Corrected for renovation to account only for net new building construction
- Disaggregated for different building types (residential, offices, retail, other)

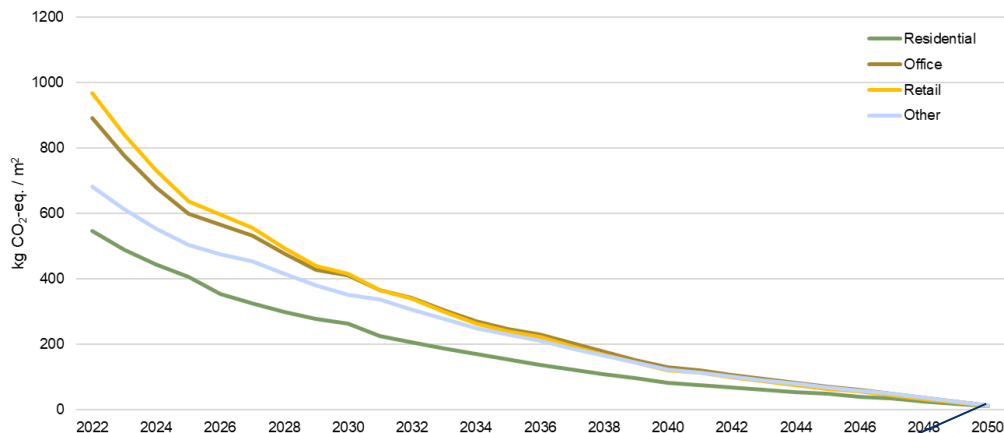


Sources: IEA (2021) https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf; Deetman et al (2020). Modelling global material stocks and flows for residential and service sector buildings towards 2050. <https://doi.org/10.1016/j.jclepro.2019.118658>

CARBON INTENSITY UPFRONT EMBODIED GHG EMISSIONS PATHWAY FOR NEW BUILDINGS (SDA PATHWAY)

All pathways and targets relate to upfront embodied carbon (A1-A5) for the entire building, including structure, floors, roof, internal and external walls, and finishes up to a CAT A fit out.

The m2 relate to the gross floor area of the building.



**97% reduction
relative to 2020
absolute GHG
emissions by 2050**

Emission intensity targets kg CO₂eq/m²

	2025	2030	2035	2040	2045	2050
Residential	406.8	264.0	154.1	84.2	49.0	11.3
Office	598.6	410.0	247.1	129.9	70.3	14.3
Retail	638.1	414.9	239.2	121.7	64.2	12.9
Other	504.0	350.6	230.3	124.0	69.4	14.9

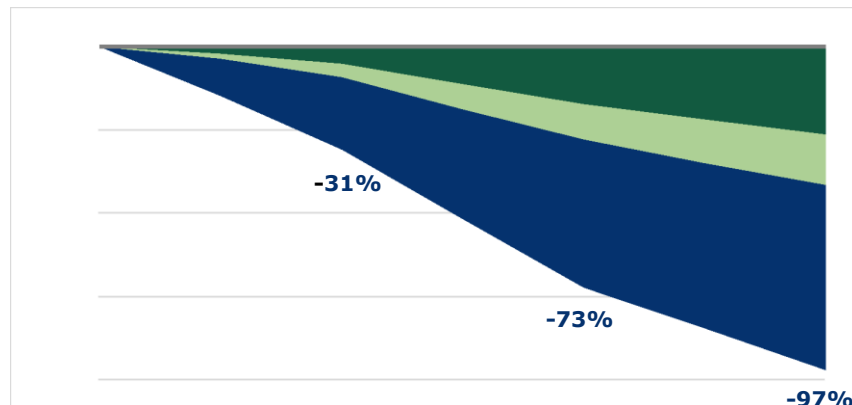
TO BE ALIGNED WITH A 1.5°C TARGET, EMISSIONS REDUCTIONS ARE NEEDED THAT GO MUCH BEYOND THE DECARBONIZATION OF THE PRODUCTION OF STEEL AND CEMENT

- Reducing upfront embodied emissions is influenced by material sectors, which reduce more slowly up to 2030

Sector	Share of total upfront GHG emissions from construction 2019	Reduction % relative to 2020 levels (SBTi absolute reduction, scope 1)	
		2030	2050
Cement	28%	-19%	-94%
Steel	17%	-24%	-91%

- Much further reduction measures are needed, including improving design for less material use and shifting to low-carbon material alternatives from reuse, recycling or sustainable bio-based sources

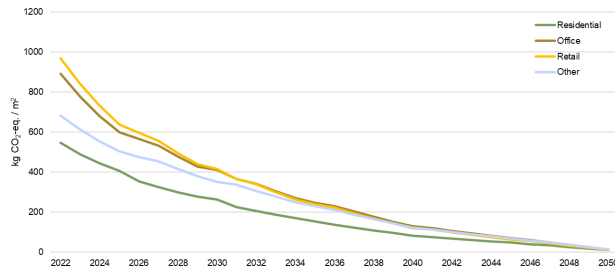
Reduction pathway for absolute upfront embodied emissions with contribution from cement and steel industries



THE PATHWAYS FOR ALL BUILDING CONSTRUCTION ACTIVITIES INCLUDING RENOVATION IS STEEPER THAN FOR NEW CONSTRUCTION ONLY

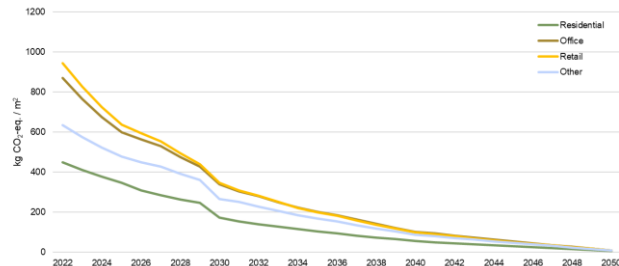
The pathways for all building construction activities project a steeper reduction in kg CO₂-eq/m², due to the additional number of m² being included for renovation, with upfront GHG emissions per m² about 50% lower for renovation than for new construction. However, the pathway for all building construction activities allow the market to focus on renovation and increase the number of m² that can be delivered for the same carbon budget.

New buildings only



	2025	2030	2035	2040	2045	2050
Residential	406.8	257.4	154.1	84.2	49.0	11.3
Office	598.6	385.8	247.1	129.9	70.3	14.3
Retail	638.1	390.9	239.2	121.7	64.2	12.9
Other	504.0	350.6	230.3	124.0	69.4	14.9

All building construction activities

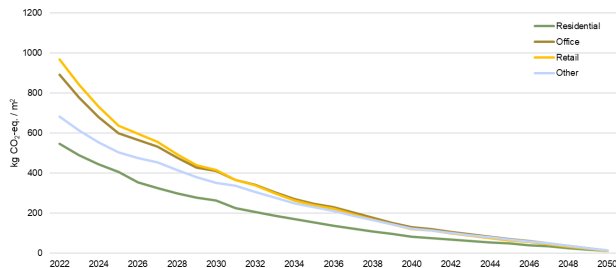


	2025	2030	2035	2040	2045	2050
Residential	348.0	171.6	105.5	56.5	31.2	6.5
Office	598.2	325.0	201.7	103.0	53.5	10.3
Retail	637.6	333.0	199.4	99.2	50.5	9.6
Other	478.8	265.4	169.3	88.7	47.4	9.4

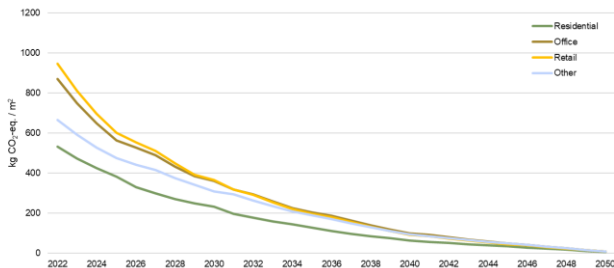
THE PATHWAYS DO NOT SIGNIFICANTLY CHANGE WHEN A DIFFERENT DOWNSCALING APPROACH IS APPLIED

Independently of the downscaling approach applied, the upfront embodied emissions pathways project a steep reduction in kg CO₂-eq/m₂, due to the projected expansion in m² being built in the future, especially in developing economies.

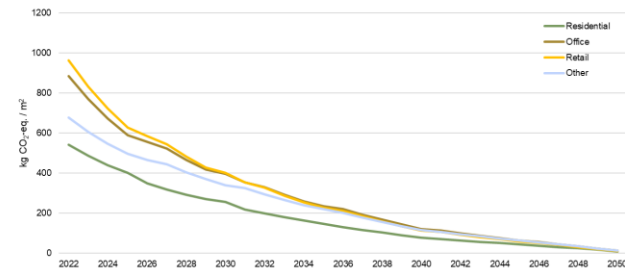
Grandfathering
(allocated share of emission budget = 10.2%)



Economic value added
(allocated share of emission budget = 6.6%)



Equal-per-capita and utilitarian
(allocated share of emission budget =)



KEY CRITERIA AND RECOMMENDATIONS

WHAT DOES THE GUIDANCE INTEND TO DO?

- **Science-based targets (SBTs)** indicate how much and by when an individual company should **reduce emissions** from its operations and value chain to be in line with the carbon budget.
- SBTs are **different to asset-level standards, certification schemes or assessments** - these are a complementary tool for designing and managing buildings in a sustainable way.



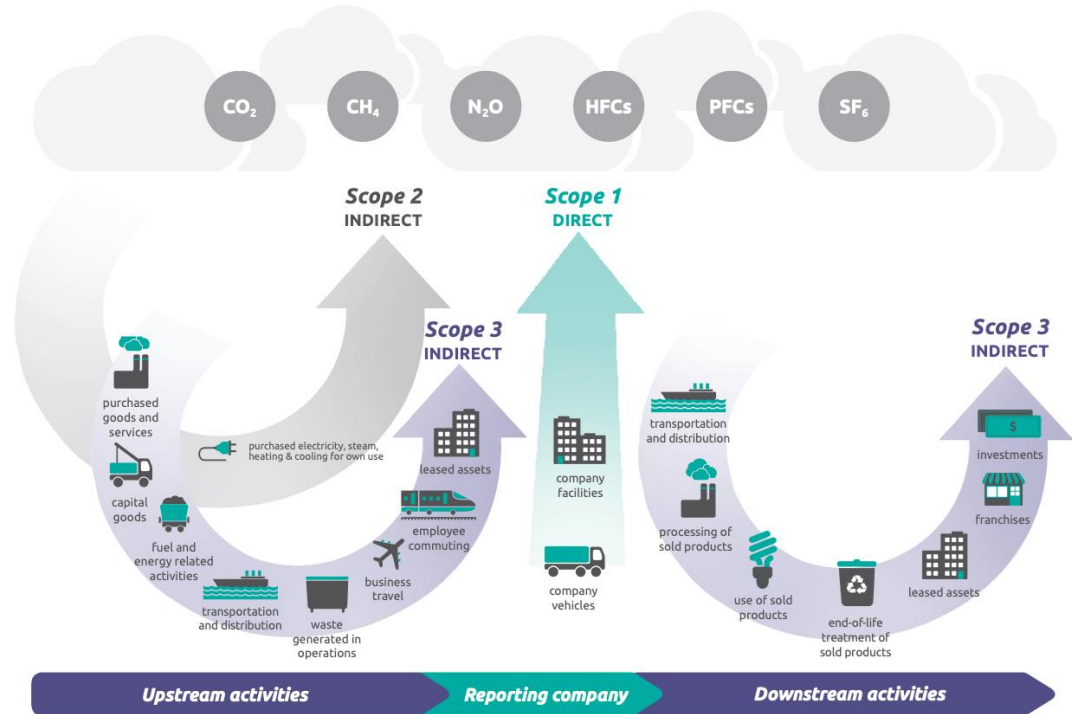
GUIDANCE FOR GHG ACCOUNTING AND TARGET-SETTING

1. Accounting and reporting:

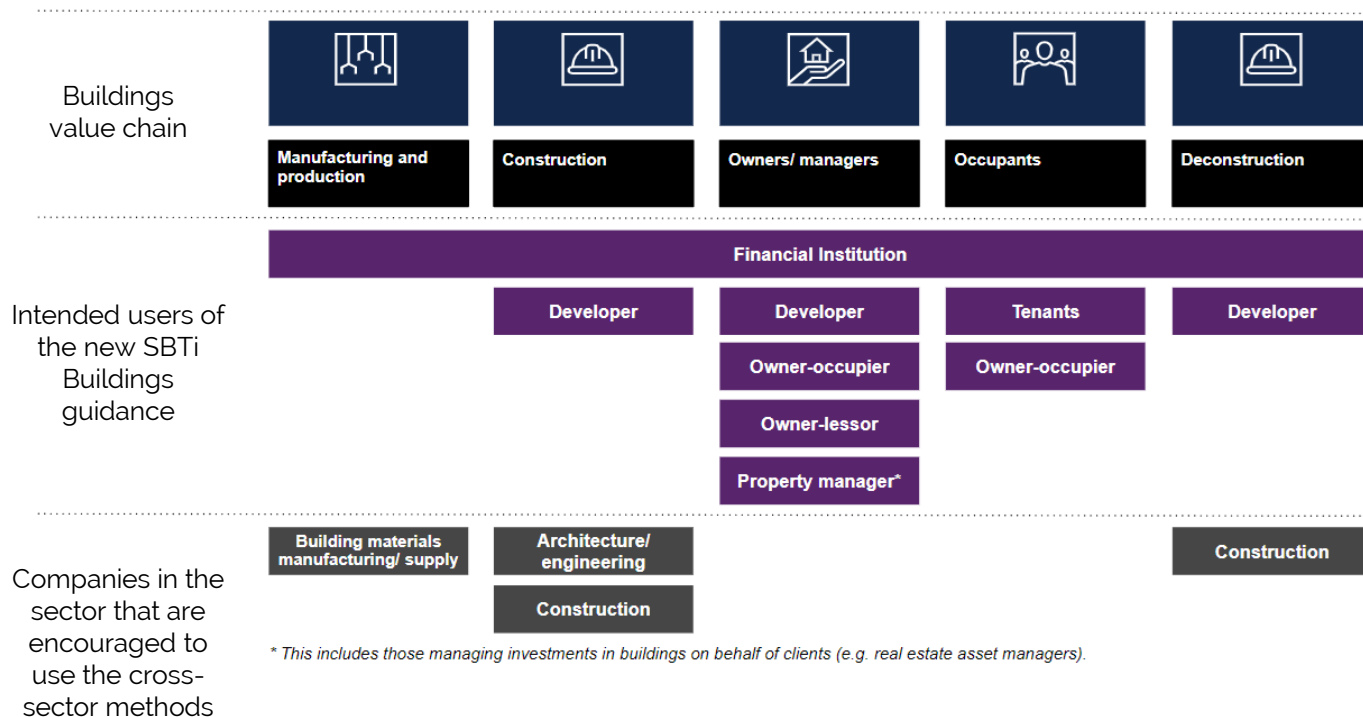
- Additional accounting guidance and requirements.

2. Target-setting:

- Detailed guidance on setting science-based targets for buildings-related emissions.
- Defining target boundary and available target-setting methods.



BUILDINGS VALUE CHAIN: BROAD ARRAY OF ACTORS



WHOLE BUILDING APPROACH

Companies are required to report all building-related in-use operational emissions together despite the scope. This is called the '**whole building approach**'.



Traditional corporate GHG accounting:

Emissions of owner-controlled (scope 1 and 2) and tenant-controlled spaces are separated (scope 3).

Whole building approach: in-use operational emissions are expressed in kg CO₂e/m² for the whole building.

NOTE: Whole building approach is not to be confused with "whole life carbon", where all life cycle stages are considered together at the level of individual buildings.

ACCOUNTING APPROACH FOR SCOPE 2

Companies and financial institutions may use either **location- or market-based** scope 2 accounting for their targets.

However, companies are required to **disclose their buildings-related emissions using location-based accounting approach.**





PORTFOLIOS WITH HIGH TURNOVER

Companies and financial institutions whose business model is reliant on a high turnover of assets are allowed to set **fixed intensity targets** aligned to sectoral decarbonization pathways.

MAINTENANCE TARGETS FOR HIGHLY PERFORMING PORTFOLIOS

Companies and financial institutions whose **in-use operational intensities** are at 2050 levels set maintenance targets and commit to maintain intensities at the 2050 levels.





NO NEW FOSSIL FUEL EQUIPMENT

Additional measure to safeguard against unintended consequences and to avoid harmful long-term investments.

Commitment to **no new fossil fuel equipment in buildings portfolios** within 5 years from target submission or by 2030, whichever is sooner.

EXAMPLE TARGET AND TARGET WORDING | IN-USE EMISSIONS

COMPANY/FI	DESCRIPTION	BASE YEAR 2021 OPERATIONAL IN-USE EMISSIONS (TCO ₂ e)	REQUIRED INTENSITY REDUCTION BY 2030
A	A REIT that owns and leases office space in Singapore, Philippines and Malaysia.	26,900	62.4%

Target wording:

"REIT A commits to reduce scope 1, 2, and 3 in-use operational GHG emissions of owned and leased buildings 62.4% per m² by 2030 from a 2021 base year."

EXAMPLE TARGET AND TARGET WORDING | UPFRONT EMBODIED EMISSIONS

COMPAN Y/ FI	DESCRIPTION	BASE YEAR 2021 OPERATIONAL IN-USE EMISSIONS (TCO ₂ e)	OPTION 1: ABSOLUTE CONTRACTION TARGET BY 2030	OPTION 2: SECTOR- SPECIFIC INTENSITY REDUCTION BY 2030
B	A developer that develops residential buildings.	33.000	30.9%	53.9%

Target wording:

"[Company B] commits to reduce upfront embodied absolute scope 3 GHG emissions of new buildings 30.9% by 2030 from a 2021 base year."

"[Company B] commits to reduce upfront embodied scope 3 GHG emissions of new buildings 53.9% per m² by 2030 from a 2021 base year."

PILOT TESTING

- The SBTi is releasing the SBTi Buildings Guidance and Target-Setting Tool as drafts for pilot testing to be **tested with companies and financial institutions**.
- The **objectives** of the pilot test are to:
 - Inform the development of robust, clear and applicable guidance and criteria.
 - Identify any possible challenges in implementing the guidance.
- From **November 21st to December 10th** companies and financial institutions are encouraged to submit their applications to participate through this [form](#), and following the pilot testing Terms of Reference.



RESOURCES FOR PILOT TESTING

THE SBTi BUILDINGS GUIDANCE AND TARGET-SETTING TOOL DRAFTS FOR PILOT TESTING AND WORKED EXAMPLES



BUILDINGS SECTOR SCIENCE-BASED TARGET- SETTING GUIDANCE

Version 0.2 - Draft for Pilot Testing
November 21, 2023

The SBTi Buildings Guidance Draft for Pilot Testing:

Provide methodology on how to set targets for the buildings-related emissions.



SBTi BUILDINGS SECTOR WORKED EXAMPLES

Version 0.2 - Draft for Pilot Testing
November 21, 2023

Worked Examples Draft for Pilot Testing:

Provide different worked examples to guide users in developing targets according to the draft SBTi Buildings Guidance.



Buildings Target-Setting Tool Draft for Pilot Testing:

The tool calculates targets using the SDA method for both in-use operational and upfront embodied emissions.

PILOT TARGET VALIDATION STEPS



1. EXPRESS INTEREST

Companies and FIs are asked to **express their interest in pilot testing** by filling out [this survey](#) by **10 December 2023**.



2. DEVELOP TARGETS

Selected pilot test companies and FIs **develop their buildings-related targets** using the draft resources.

Pilot test companies and FIs are provided with **Q&A sessions with the technical team** to tackle any issues raised in the target development



3. SUBMIT FOR REVIEW

Pilot test companies and FIs **submit their buildings-related targets and relevant evidence for a review at the latest 11 February 2024**. Targets are not validated but reviewed against the draft criteria.

Learnings during the pilot test phase provide input in the development of the **target validation compliance criteria** and inform the SBTi of any possible need to amend the resources.

Pilot test **companies and FIs receive feedback** on their targets and, if desired, are acknowledged in the final guidance and are provided with communications opportunities.

PILOT TEST COMPANIES & FIs: SELECTION CRITERIA

- Total of **10-15 companies and FIs** can participate in pilot testing.
- All intended users types of the guidance represented by at least one submission.
- **In-use operational** targets to cover as many regions as possible.
- Company/FI must be able to **submit all required evidence by February 11, 2024.**
- The SBTi makes the **final decision on the pilot test group** in December.





SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Q&A SESSION

Poll #4



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

CLOSING REMARKS



THE TIME TO ACT IS TODAY!

- Companies and financial institutions are invited to apply for pilot testing by 10 Dec 2023 by filling out [this survey](#).
- The draft guidance for pilot testing, the draft tool and survey, as well as the recording of this webinar, can be found on the [SBTi buildings webpage](#).
- Should you have any questions, contact us at buildings@sciencebasedtargets.org.

THANK YOU!



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

Contact

buildings@sciencebasedtargets.org

[Buildings - Science Based Targets](#)



info@sciencebasedtargets.org



www.sciencebasedtargets.org



[@sciencetargets](https://twitter.com/sciencetargets)



[science-based-targets](https://www.linkedin.com/company/science-based-targets/)