Carbon Direct

Carbon Removal in a Beyond Value Chain Mitigation Strategy

May 2, 2024

MEET THE EXPERTS

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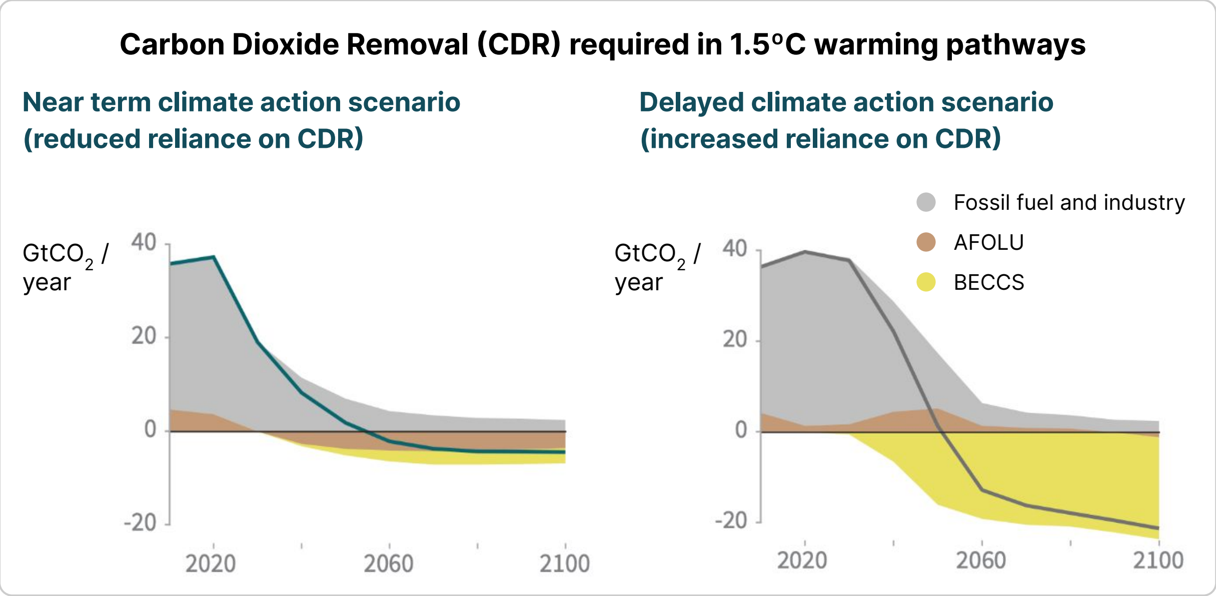
Near-term climate action is critical to meeting the goals of the Paris Agreement



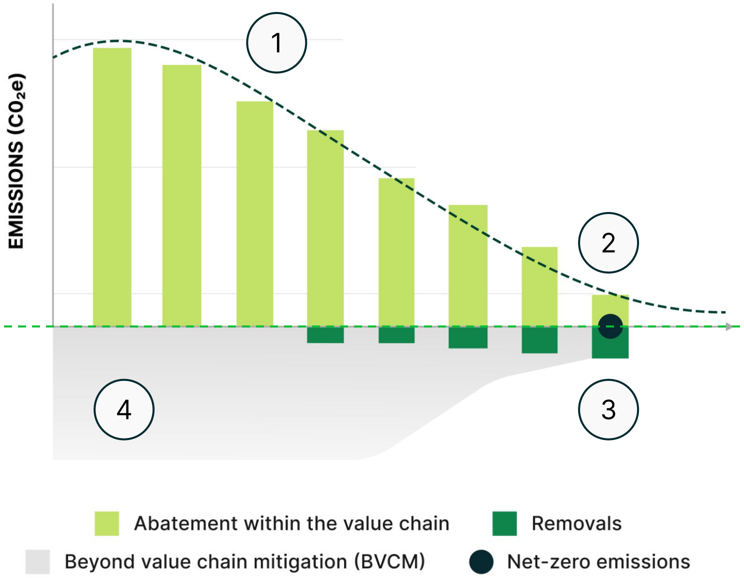
All pathways that limit global warming to 1.5°C with no or limited overshoot require significant levels of CDR by mid-century.

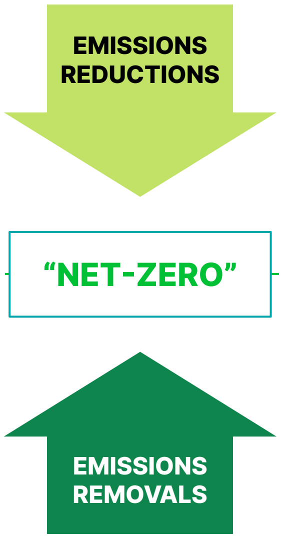
In addition, investments in reductions and removals **today** play a critical in reducing near-term warming and limiting carbon budget overshoot.

Source: McKay et al., Exceeding 1.5°C global warming could trigger multiple climate tipping points, (2022); IPCC, Summary for Policymakers. In: Global Warming of 1.5°C., (2018). AFOLU = Agriculture, Forestry and Other Land Use. BECCS = Bioenergy with Carbon Capture and Storage.

Under the Corporate Net-Zero Standard, there are four key elements to a credible net-zero target

Illustrative net-zero pathway





1. **Near-term** reduction targets (5-10) years covering >95% of scope 1 and 2 emissions and >67% of scope 3 emissions.*

2. **Long-term** reduction targets (by 2050) covering >95% of scope 1 and 2 emissions and 90% of scope 3 emissions.

3. **Neutralization** of residual emissions at and after the net-zero target year through permanent carbon removal and storage.

4. Action to mitigate emissions above and beyond reduction targets in the transition to net zero ("**beyond value chain mitigation**").

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*Source: Image adapted from SBTi (2024). *For companies whose scope 3 emissions make up >40% of total scope 1, 2, and 3 emissions.*

Beyond value chain mitigation (BVCM) refers to climate action or investments that fall outside an organization's value chain

→ Mitigation action or investments include activities that **avoid or reduce** greenhouse gas (GHG) **emissions**, or those that **remove and store** GHGs from the atmosphere.

→ Mitigation outcomes can be both **quantified** (e.g., measured in tCO_2e) or **uncertain/ unquantifiable** (e.g., cannot be measured or are not guaranteed to occur).

→ These outcomes can be delivered through a range of instruments, including **carbon credits** or **direct investments** (e.g., project finance).

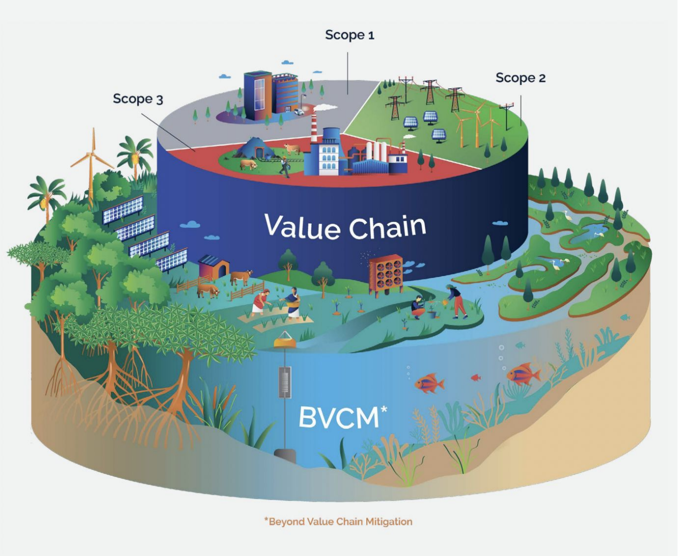

Image source: SBTi, Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM), 2024. tCO2e = tonnes of carbon dioxide (CO2) equivalent.

BEYOND VALUE CHAIN MITIGATION

While beyond value chain mitigation is voluntary, it plays an important role in contributing to global net zero

→ BVCM does not count toward emissions reduction targets and is not *required* under the Corporate Net-Zero Standard. Instead, it is a way for organizations to go **above and beyond** reduction targets in the transition to net zero.

→ BVCM can include investments in **emissions reductions**, carbon removal with **shorter-lived carbon storage,** and wider forms of **climate action**, as well as permanent carbon removal. This is distinct from neutralization, which is restricted to permanent carbon removal and storage.

In February 2024, the SBTi released long-awaited guidance on implementing beyond value chain mitigation

→ Since 2021, the SBTi has recommended beyond value chain mitigation as part of corporate net-zero targets.

→ However, until the release of this report, the SBTi had offered limited guidance on how to design and implement a beyond value chain mitigation strategy.

→ The report released in February now provides guiding principles, worked examples, and best practice recommendations, drawing on 12 months of public and expert consultation.

Image source: SBTi, Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM), 2024. SBTi, Raising The Bar: An SBTi Report on Accelerating Corporate Adoption of Beyond Value Chain Mitigation (BVCM), 2024.

The new guidance outlines four key steps to a beyond value chain mitigation strategy

Step 1

Set and work to deliver a net-zero target, including developing a climate transition plan.

Step 2

Establish a BVCM pledge, including determining the scale and timeframe of BVCM investments.

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Step 3

Take action to deliver BVCM, including defining quality standards and guardrails for BVCM activities.

Step 4

Report on BVCM activities and outcomes and make transparent and accurate claims.

Source: SBTi, *Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM)*, 2024.

ESTABLISHING A PLEDGE

Tonne-for-tonne

Organizations fund beyond value chain mitigation **proportional to** some percentage of unabated GHG **emissions** in a defined period (e.g, 50% of annual unabated emissions).

Organizations are able to fund mitigation activities at their chosen cost-per-tonne in order to achieve their matched mitigation pledge.

ESTABLISHING A PLEDGE

Money-for-tonne

Organizations channel finance into beyond value chain mitigation **based on a** predefined **reference price of** unabated GHG **emissions** in a defined period.

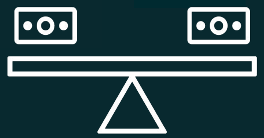
The volume of finance deployed is determined by the chosen cost of carbon (e.g., a social cost of carbon or otherwise) and the unabated emissions in the defined period (e.g. 50% of their annual unabated emissions).

ESTABLISHING A PLEDGE

Money-for-money

Organizations allocate a **share of revenue or profit** towards funding climate mitigation beyond the value chain.

The volume of finance deployed is determined by the chosen denominator (e.g., profit or revenue) and the chosen percentage.



Determining the right approach

Approach	Benefits	Drawbacks
Tonne-for-tonne	• Commitment is framed **based on mitigation delivered (in tCO_2e)** and therefore ensures mitigation occurs when credits are high-quality • Clear metric for impact measurement and verification • May incentivize mitigation at the **least cost** to society	• May result in more **limited deployment of finance** • May lead to **optimizing the price** of mitigation outcomes **at the expense of quality** • No link between funding volume and externalities linked to unabated emissions
Money-for-tonne	• Can **increase the amount of finance mobilized** when a science-based carbon price is used • May increase **funding for higher cost mitigation options** or investments with uncertain or unquantifiable outcomes • Creates a ***de facto* internal carbon price** which incentivizes value chain emission reductions	• Places **less emphasis on guaranteed mitigation** outcomes • Impact metrics are **less well-established** • Challenges with establishing the ‘right’ price of carbon
Money-for-money	• May increase **funding for higher cost mitigation options** or investments with uncertain or unquantifiable outcomes	• Places **less emphasis on guaranteed mitigation** outcomes • Challenges with establishing a **scientific basis** for determining the **share of the chosen financial metric** to be channeled into BVCM

Source: SBTi, Above and Beyond: An SBTi Report on the Design and Implementation of Beyond Value Chain Mitigation (BVCM), 2024.

BEYOND VALUE CHAIN MITIGATION

What does the SBTi recommend as the best practice approach?

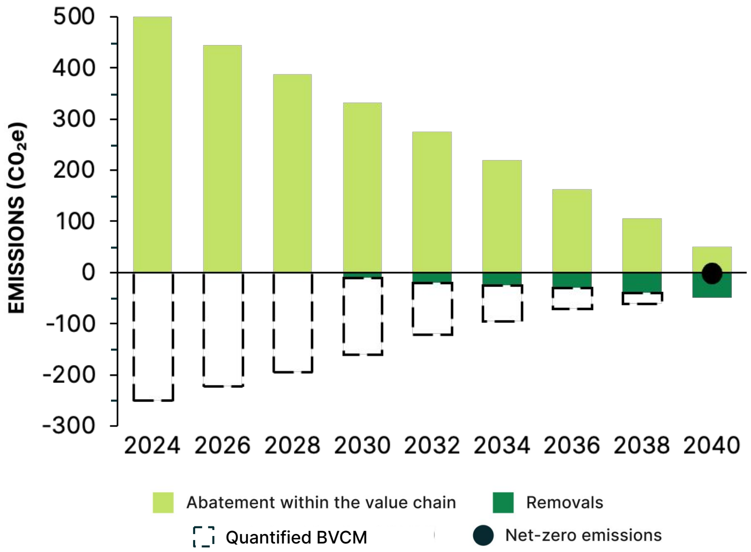
- → The SBTi considers the best practice implementation of beyond value chain mitigation to follow a **money-for-tonne** approach.
- → Under this, organizations determined a financial budget for BVCM by applying a carbon price to unabated scope 1, 2 and 3 emissions.
- → Of this, the SBTi recommends using a portion of this budget to deliver quantified (ex-post) mitigation outcomes* equivalent to at least 50% of residual scope 1, 2 and 3 emissions.
- → Organisations can then decide whether to allocate the remaining budget toward additional quantified mitigation or toward uncertain/ unquantifiable mitigation.

**Reductions or removals generated from 2021 onwards.*

How might a money-for-tonne approach be implemented?

ILLUSTRATIVE EXAMPLE

Illustrative financial budget (2024)	
Emissions (tCO_2e)	500
Carbon price ($/$tCO_2e$)	$51*
Total commitment ($)	$25,500
Ex-post carbon credits equivalent to 50% of emissions (250 tCO_2e) at $20/tonne	*$5,000*
Direct investment into a Direct Air Capture (DAC) plant not yet issuing carbon credits	*$20,500*



United States Interagency Working Group on Social Cost of Greenhouse Gases' interim value for the social cost of carbon (2021).

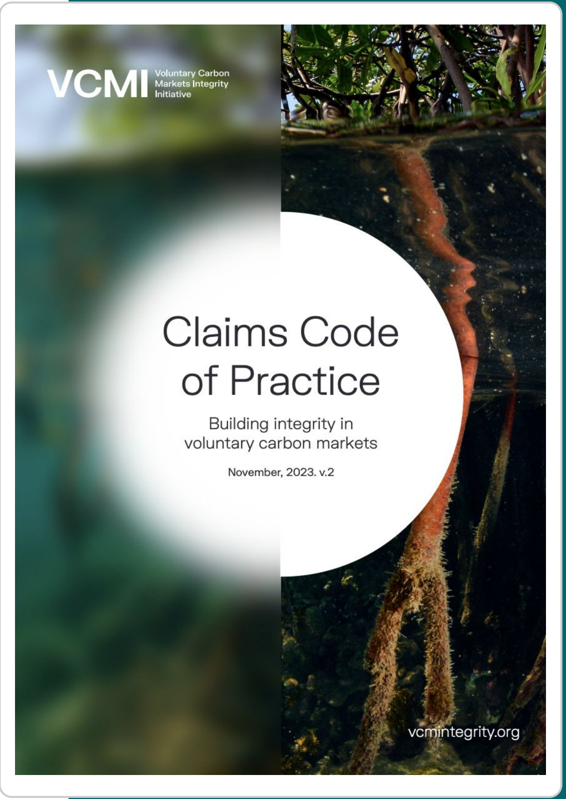
BEYOND VALUE CHAIN MITIGATION

How does the SBTi recommended approach differ from guidance from the VCMI?

→ The Voluntary Carbon Markets Integrity Initiative (VCMI) Claims Code of Practice outlines a **tonne-for-tonne approach**, whereby companies fund beyond value chain mitigation through the retirement of carbon credits equivalent to a share of unabated emissions.

→ While this differs from the SBTi's best practice recommendation (money-for-tonne), organizations following these recommendations are still able to meet VCMI Silver and Gold Carbon Integrity Claim tiers.

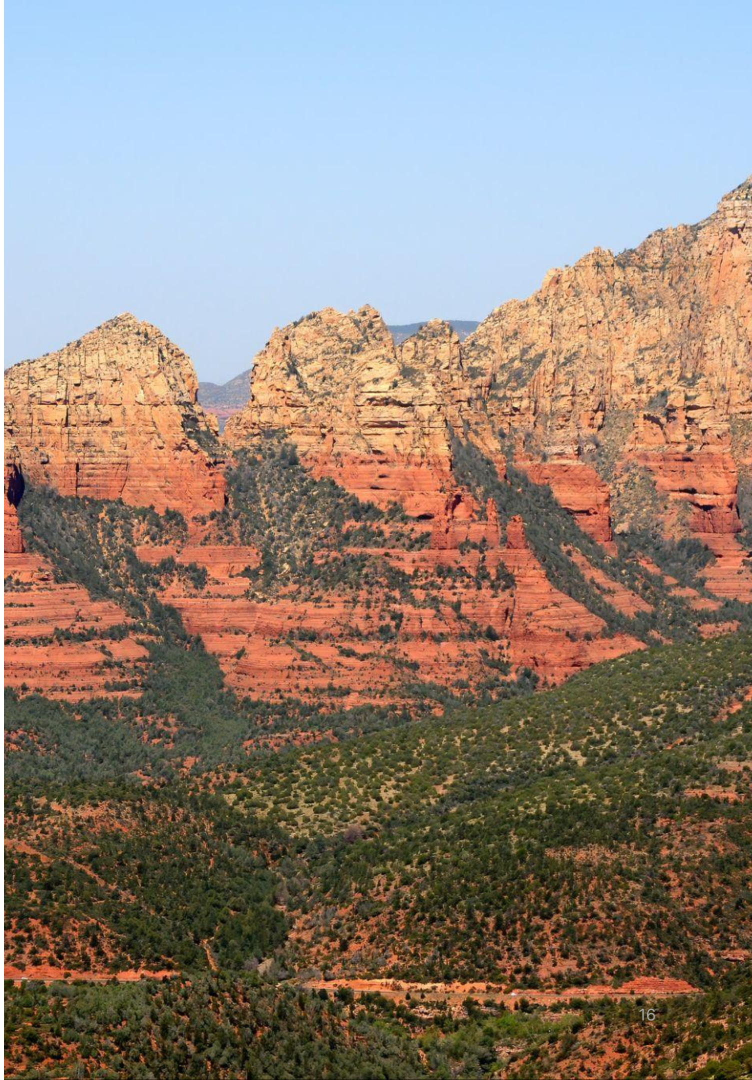
→ Under the Beta Scope 3 Flexibility Claim, the VCMI will allow carbon credits to be used toward scope 3 reduction targets, which the SBTi will publish a draft proposal on in July 2024.



BEYOND VALUE CHAIN MITIGATION

What are other considerations for choosing an approach?

- → Scale of ambition:
  - ○ Scope of emissions covered (scope 1 and 2 or scopes 1, 2 and 3)
  - ○ Carbon price/ financial metric used
- → Business case and strategic objectives:
  - ○ Types of activities to invest in (e.g., quantified or uncertain/ unquantifiable, reductions or removals)
  - ○ Types of claims to make (e.g., compensation or contribution)
  - ○ Alignment with other standards (e.g., Voluntary Carbon Markets Integrity Initiative)



BEYOND VALUE CHAIN MITIGATION

What does the guidance say about setting a *carbon price*?*

→ The SBTi **does not recommend a specific carbon price**. Instead, it outlines different carbon pricing methods (e.g., the social cost of carbon) as references.

→ It also states that it considers science-based carbon prices to represent the **economic value of GHG emissions** based on robust scientific assessment.

→ Regardless of the price chosen, the SBTi recommends **reporting the chosen carbon price**, the methodology or source that informs it, and a justification for the price chosen.

Docket ID No. EPA-HQ-OAR-2021-0317
September 2022

EPA

Supplementary Material for the Regulatory Impact Analysis for the Supplemental Proposed Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review"

EPA External Review Draft of Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances

Article | Published: 17 August 2020

A near-term to net zero alternative to the social cost of carbon for setting carbon prices

Noah Kaufman, Alexander R. Barron, Wojciech Krawczyk, Peter Marsters & Haewon McJeon

Nature Climate Change **10**, 1010–1014 (2020) | Cite this article

39k Accesses | **85** Citations | **422** Altmetric | Metrics

*Relevant for money-for-tonne approach.

BEYOND VALUE CHAIN MITIGATION

What does the guidance say about carbon *credit quality*?

- The **SBTi does not point to a specific framework** for ensuring carbon credit quality or the quality of other investments. Instead, it signposts various resources for define quality standards and guardrails, including the Integrity Council for the Voluntary Carbon Market (ICVCM).
- For organizations that wish to make Voluntary Carbon Markets Integrity Initiative (VCMI) Carbon Integrity Claims as part of their beyond value chain mitigation strategy, carbon credits must be approved by the ICVCM from 2026 onwards.*

**For adherence to ICVCM's Core Carbon Principles (CCPs).*

Carbon removal in a BVCM strategy

CARBON REMOVAL IN A BVCM STRATEGY

Carbon removal is one of many types of BVCM activities and investments

EMISSIONS REDUCTION/AVOIDANCE			CARBON REMOVAL		WIDER CLIMATE ACTION	
Avoided emissions, or emission reduction from geosphere (without storage)	Avoided emissions, or emission reduction from biosphere	Emission reduction from geosphere (with storage)	Carbon removal to the biosphere	Carbon removal to the geosphere	Climate change adaptation	Climate change loss and damage
e.g., renewable energy, energy efficiency	e.g., avoided ecosystem loss & degradation	e.g., carbon capture and storage (CCS) on fossil-fuel power plant	e.g., afforestation and reforestation, soil carbon enhancement	e.g., Direct Air Capture, Bioenergy with Carbon Capture and Storage (BECCS)	e.g., climate resilience-building programs	e.g., contingency funds and/or insurance for climate- related impacts

Higher risk of reversal → *Lower risk of reversal*

Source: Adapted from University of Oxford, (2024).

Funding carbon removal through BVCM can play a critical role in meeting climate targets

- → To achieve net-zero CO_2 emissions, an estimated **6-10 billion tonnes** of CO_2e will need to be removed annually by 2050, with these values being higher if emissions reductions targets are not met.
- → Scaling up valid, durable carbon removal to this level in fewer than 30 years requires immediate investments from companies and governments alike.
- → Beyond value chain mitigation creates an avenue to contribute to the scale up of these solutions, including investments in both established and emerging CDR solutions and solutions with uncertain or unquantifiable outcomes.

Source: IPCC, (2022); IPCC, (2021); IPCC (2018).

Guidance frameworks encourage organizations to increase the share of BVCM investment into CDR in the transition to net zero

Organization	CDR recommendations
SBTi	Companies should disclose information such as **planned milestones and near-term investments** that demonstrate the integrity of commitments to neutralize residual emissions at net zero.
UN Race to Zero	Organizations should compensate for any unabated emissions year on year through investment in high quality carbon credits, **disclose neutralisation milestones** that demonstrate the integrity of commitments to neutralise unabated emissions and state how [it plans] to neutralise any residual emissions by 2050 through high-quality, permanent removals.
Oxford Principles	Organizations investing in projects to counterbalance residual emissions should **progressively increase** the portion of their investments into carbon removal projects, starting now, ultimately aiming to reach 100% removals by the global net zero date (2050 at the latest).

Source: SBTi, SBTi Corporate Net-Zero Standard, (2024); UN Race to Zero, Starting Line and Leadership Practices, (2022); University of Oxford, Oxford Principles for Net Zero Aligned Carbon Offsetting, (2024).

CARBON REMOVAL IN A BVCM STRATEGY

Based on the desired approach, CDR can be incorporated into a BVCM strategy via different instruments

<table>
<tr><th>Approach</th><th>Relevant instruments for funding CDR</th></tr>
<tr><td>Tonne-for-tonne</td><td>→ Purchase ex-post carbon removal credits equal to a portion of annual emissions; and/or
→ Contract ex-ante carbon removal credits for application towards beyond value chain mitigation in a future period (e.g., contracting tonnes in 2024 for delivery in 2030).</td></tr>
<tr><td>Money-for-tonne</td><td rowspan="2">→ Purchase ex-post carbon removal credits; and
→ Make direct investments into carbon removal projects; and/or
→ Contract ex-ante carbon removal credits (after allocating a portion to quantified mitigation).</td></tr>
<tr><td>Money-for-money</td></tr>
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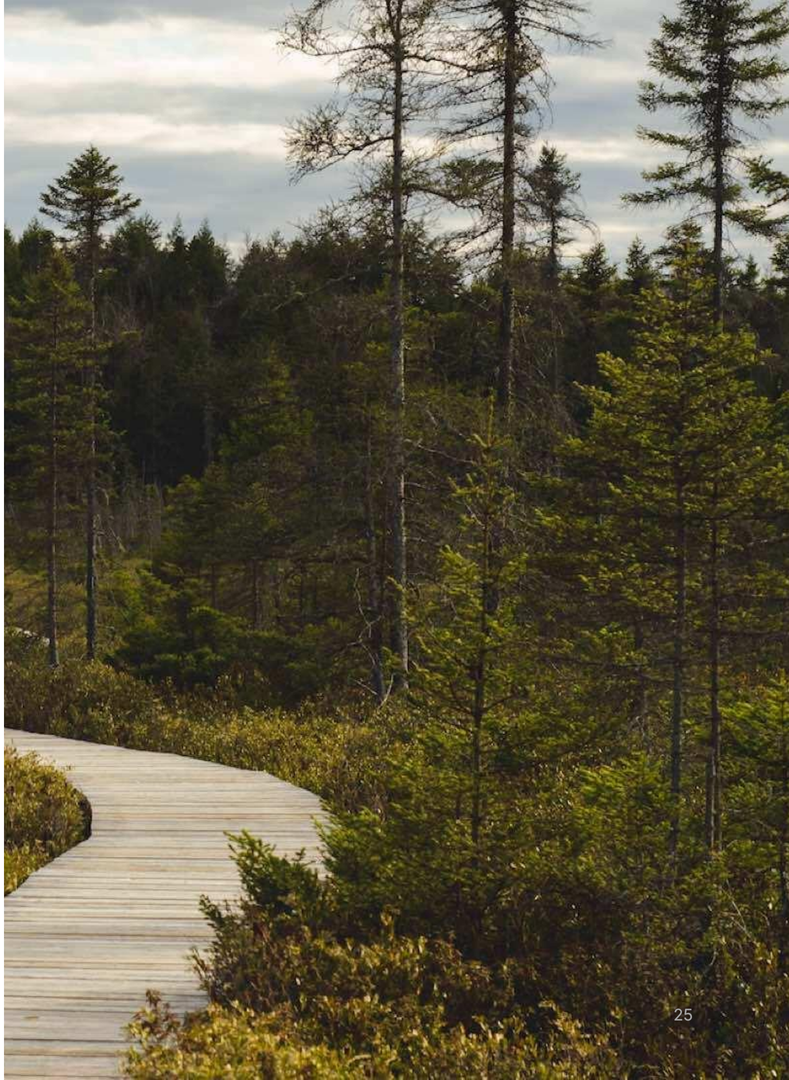
Communicating a BVCM strategy

What does the SBTi guidance say about climate *claims*?

→ The SBTi **does not plan to validate** beyond value chain mitigation **claims**.

→ Instead, the guidance refers to other voluntary initiatives and frameworks, such as the VCMI Claims Code of Practice, as well as outlining regulatory considerations for constructing claims.

→ The guidance also defines alternative approaches to climate claims. Specifically, the guidance discusses **contribution claims** as an alternative to compensation claims (e.g., claiming carbon neutrality), in which companies would refer to their contribution to global climate mitigation efforts within a broader decarbonization strategy.



More generally, there are five key considerations for communicating a carbon management plan

Align with industry best practices, standards, and guidance.
Explore alignment to voluntary standards and continue to refine strategy as best practices and regulations evolve.

Acknowledge that carbon science is constantly improving.
Create a dynamic strategy that can continuously improve based on latest available science.

Move to an action narrative.
Focus communication on active language that prioritizes iterative progress towards climate impact goals.

Use credible sources for definitions and be explicitly clear with language.
Ensure all public claims and narratives are properly cited and referenced, prioritising language from scientific and academic resources.

Explain how short-term efforts tie into long-term impact.
Clearly outline both interim and long-term decarbonization targets. Any carbon neutralization as a beyond value chain mitigation effort should be described as part of the transition to net zero.

Future considerations

FUTURE CONSIDERATIONS

What forthcoming or existing guidance should organizations monitor?

Guidance/Framework	Purpose	Timeline
VCMI Scope 3 Flexibility Claim	Guidance on the use of carbon credits toward scope 3 reduction targets	Expected September 2024
SBTi Draft Proposal and Discussion Paper	Guidance on use of Environmental Attribute Certificates (EACs) toward scope 3 reduction targets	Expected July 2024
ICVCM Assessment Framework	Release of CCP*-eligible carbon crediting programs and CCP-approved carbon credit methodologies	Ongoing starting April 2024
End-to-End Integrity Framework	Unified guidance from the SBTi, VCMI, ICVCM, CDP, Greenhouse Gas (GHG) Protocol and We Mean Business Coalition on corporate climate action	TBD

**CCP = Core Carbon Principles. EACs are defined as instruments used to quantify, verify and track the environmental benefits associated with commodities, activities or projects, such as energy attribute certificates for electricity or Sustainable Aviation Fuel Certificates (SAFc).*

CONTINUED READING

How SBTi beyond value chain mitigation guidance can drive near-term climate action

ON-DEMAND WEBINAR

Navigating Carbon Credit Communication and Climate Disclosure Laws

Q&A