

In collaboration with  
Bain & Company



# The Voluntary Carbon Market: Climate Finance at an Inflection Point

BRIEFING PAPER

JANUARY 2023



# Contents

3	Introduction
4	1 The need for a well-functioning voluntary carbon market
6	2 The carbon market is at an inflection point
9	3 Five key recommendations to scale responsible engagement in the carbon market
11	4 Building and evolving the credit portfolio over time
13	Contributors
14	Endnotes

## Disclaimer

This document is published by the World Economic Forum as a contribution to a project, insight area or interaction. The findings, interpretations and conclusions expressed herein are a result of a collaborative process facilitated and endorsed by the World Economic Forum but whose results do not necessarily represent the views of the World Economic Forum, nor the entirety of its Members, Partners or other stakeholders.

© 2023 World Economic Forum. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, including photocopying and recording, or by any information storage and retrieval system.

# Introduction

## The corporate net-zero imperative: accelerating decarbonization and investing in nature.

The science is clear: the world must reduce greenhouse gas emissions by 43% by 2030 to limit global warming to 1.5°C above pre-industrial levels.<sup>1</sup>

Mitigation plans must reduce emissions across company operations and value chains, while investing in nature in parallel. According to the Intergovernmental Panel on Climate Change (IPCC), the net CO<sub>2</sub> emissions from land use, land-use change and forestry contributed to around 10% of global emissions between 2010 and 2019.<sup>2</sup> Deforestation is responsible for nearly 15% of global CO<sub>2</sub> emissions.<sup>3</sup> Failure to invest in nature and to prevent or reverse natural loss increases global emissions.

Natural climate solutions can provide one-third of the mitigation required by 2030 to achieve global climate goals and are some of the few solutions that are ready today for carbon removal.<sup>4</sup> Conserving natural carbon sinks has significant benefits beyond emissions reduction: around 350 million people rely directly on forests for more than 20% of their income,<sup>5</sup> and 80% of terrestrial species reside in tropical forests.<sup>6</sup>

This means governments and businesses must continue to commit to and implement direct decarbonization policies and actions that align with the pace of decarbonization required by science. For companies, it means acting on the following critical levers:<sup>7</sup>

- Direct mitigation by decarbonizing Scope 1, 2 and 3 emissions at a pace consistent with limiting warming to 1.5°C above pre-industrial levels.

- Investing in the protection and restoration of ecosystems beyond the emissions reductions in their own operations; for example, through high-integrity carbon credits and investment in nature-positive projects.
- Purchasing high-quality carbon credits from projects that remove and sequester carbon from the atmosphere to balance out truly unavoidable emissions at net zero.

The voluntary carbon market (VCM) is expected to have channelled more than \$1.2 billion in investment flows over 2022, helping to mitigate about 161 megatonnes (Mt) of carbon emissions<sup>8</sup> – but it is at an inflection point, and it has come under greater scrutiny. Is it working to deliver the promised outcomes? Should companies invest as part of their corporate decarbonization strategies? How can such investment be directed in a nature-positive direction with integrity and impact? What is the best way to scale such investments?

This briefing paper provides an insight into the critical challenges delaying the market from achieving scale as well as an initial set of recommendations that corporate leaders can adopt and support to address these challenges as part of a decarbonization agenda. The paper serves as the basis for further dialogue to pave the way for wider action in 2023.



1

# The need for a well-functioning voluntary carbon market

Meeting corporate commitments to deliver net-zero pathways represents a material challenge for all companies.

Put simply, companies will need all available levers to achieve their targets and mitigate delivery risk.

Nature offers one of the most effective near-term means of reducing emissions. To decarbonize without addressing nature loss will fail to capture some of the lowest-risk decarbonization solutions available.

Additionally, investing today in engineered solutions will help reduce the green premium for solutions that will be critical to achieving corporate decarbonization strategies and limiting warming to

a 1.5-degree trajectory. The IPCC has clearly stated that carbon removals will be critical to achieving this objective in the Summary for Policymakers of the Sixth Assessment Report.<sup>9</sup>

Whether through a voluntary or compliance market structure that evolves over time, companies will need to use limited offset solutions to balance their unavoidable residual emissions. Carbon credits are the essential “net” in net zero to balance carbon accounts between emissions and reductions.



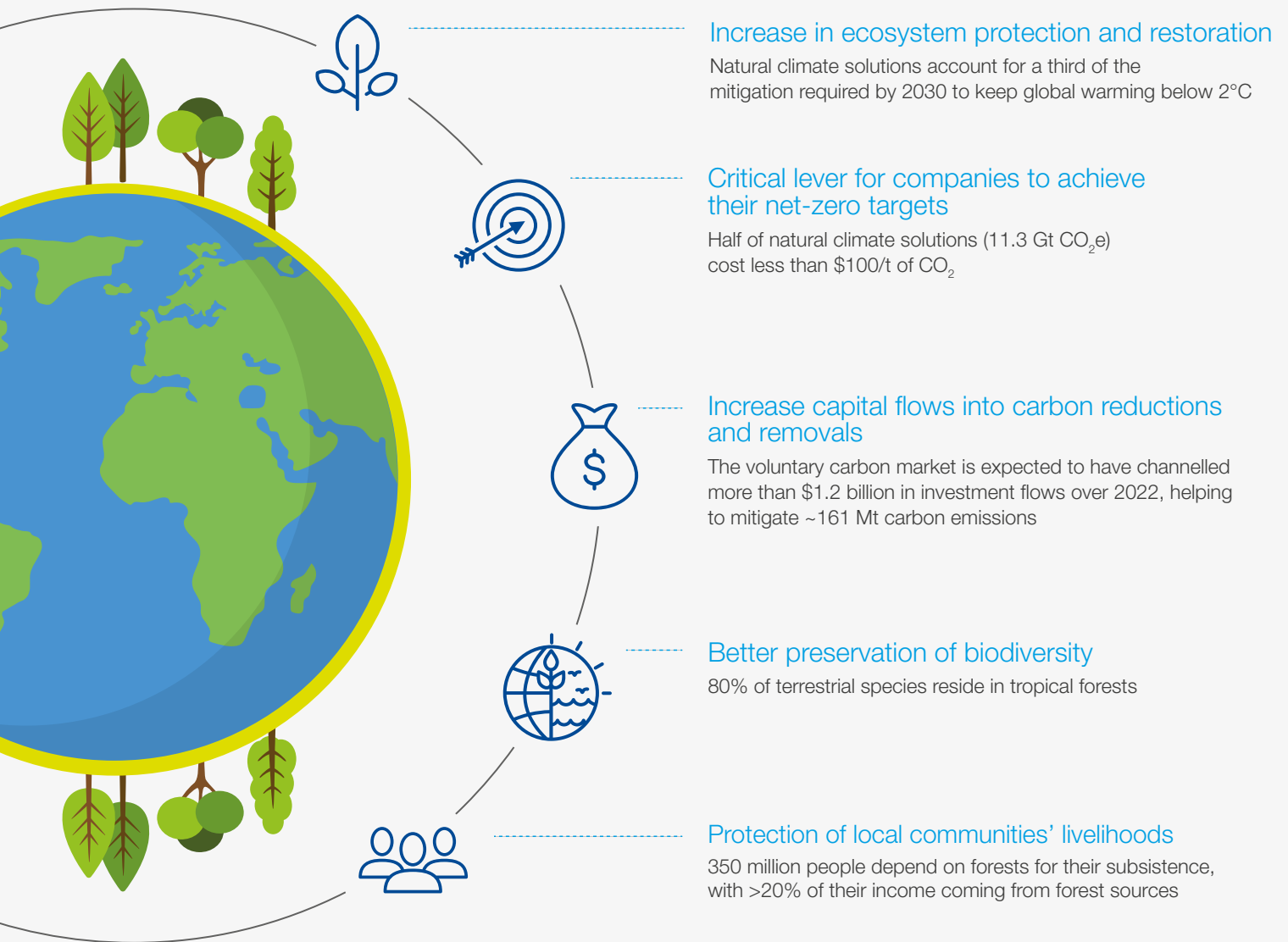
**Voluntary carbon markets will be important to go the last mile, i.e. neutralize the last 10% of emissions that can't be further reduced.**

Business Vice-President, Energy and Climate, Chemical Company

Bottom-up analysis of the 2,000 leading global companies by Bain & Company suggests the voluntary carbon market could provide demand for up to 2.6 gigatonnes (Gt) of carbon credits by 2030, a factor approximately 13 times larger than the market in 2021.<sup>10</sup> However, decisive action is

needed to scale this market from around 0.2 Gt of CO<sub>2</sub>e (CO<sub>2</sub> equivalent: the warming potential of greenhouse gases expressed in units of CO<sub>2</sub> impact) in 2021 and ensure that it functions in service of the potential environmental and societal outcomes it promises.<sup>11</sup>

FIGURE 1 | The voluntary carbon market provides considerable opportunities



Source: WBSCD, Trove Research, WWF, the World Bank

2

## The carbon market is at an inflection point

Despite this potential and the urgent need to take action to avoid further deforestation (and the associated emissions and loss of biodiversity), the voluntary carbon market is at a turning point.

Urgent interventions, market reforms and corporate commitments to ensure credible participation in the carbon market are urgently needed. These are the preconditions to growing market scale. Necessary actions include reforms to increase the credibility of

supply and demand, and the transparency of the market connecting the two. Waiting until 2030 to do so is not an option. The global price of inaction is high. Market participants will instead need to find ways to address these challenges.

### 2.1 Three key challenges the market faces

#### Project quality and credibility

The supply side requires reform to ensure that carbon credits are a trustworthy representation of real mitigation action. The action must also be additional – that is, it would not have happened without the income from carbon credits – and permanent, and it must not result in adverse

effects within or outside of its boundary. Emerging guidance from initiatives such as the Integrity Council for the Voluntary Carbon Market (ICVCM) will be critical for bringing the credibility needed to scale the market significantly.



## Building the business case and commitment for participation in a time of evolving standards

On the demand side, a lack of short-term urgency, market imperfections and reputational risk are

holding corporates back from scaling their funding of climate action through carbon markets.<sup>12</sup>



**Many corporates are in a waiting position because it is safe. We need to make it more risky to wait than to act.**

Climate action director, technology company

A survey conducted in the fourth quarter of 2022 by the World Economic Forum in partnership with Bain & Company shows that, while more than 90% of corporate respondents target net zero by 2050, less than 25% of these respondents plan to compensate for any emissions before achieving net zero. More than 50% of the respondents highlight market imperfections and a lack of transparency on climate impact and quality as reasons for their inaction and unwillingness to participate in the voluntary carbon market. Additionally, respondents emphasize the reputational risk of participating, with concern about public criticism, including legal action.

Leading companies are investing a great deal of time and effort to ensure the quality and

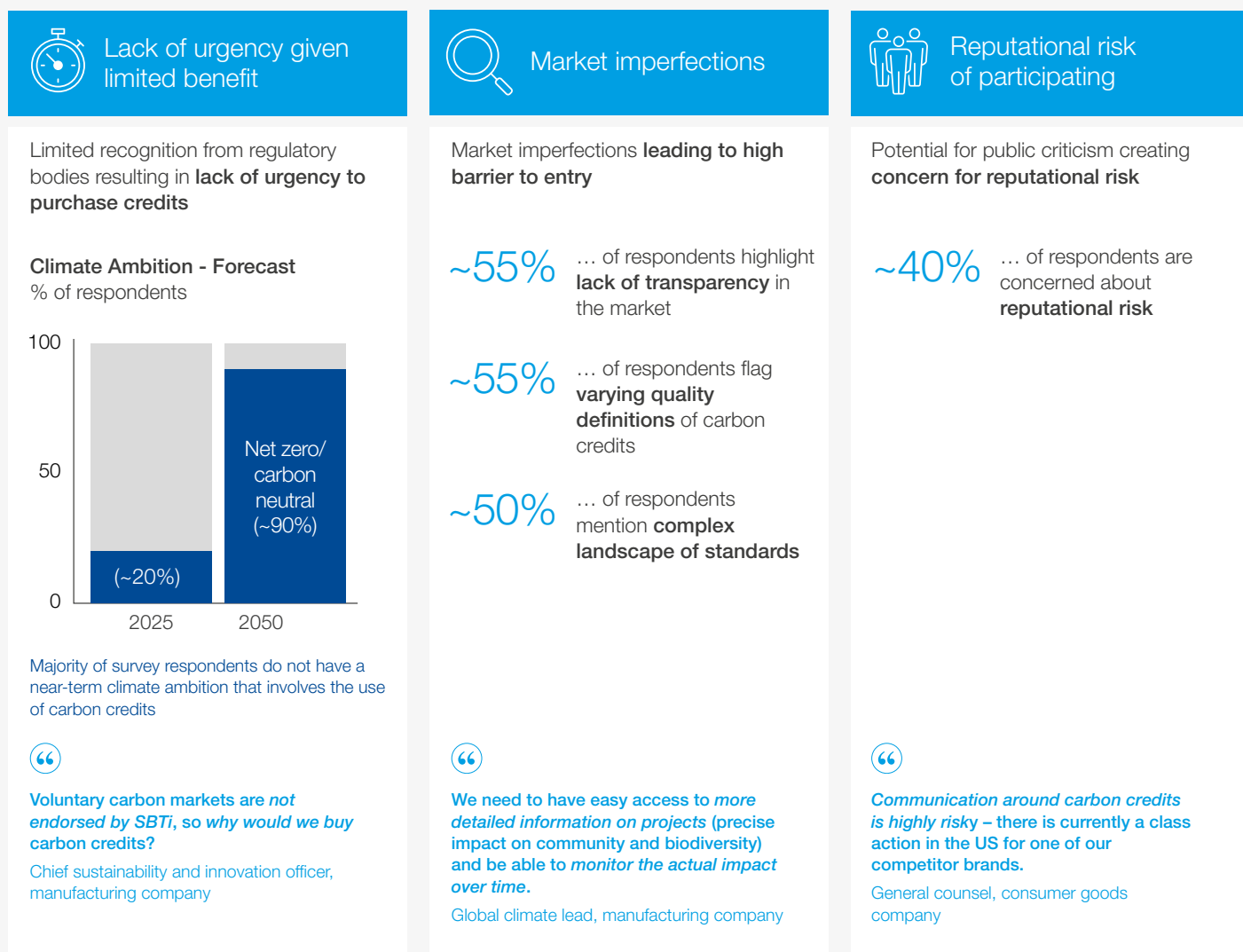
integrity of their carbon investments, yet a lack of standards and guidelines makes “good” market participation indistinguishable from investment in low-quality projects.

As a result of this uncertainty, retirement of carbon credits (the action representing the claim of the attached climate benefit) declined by 3% in 2022 (from 2021) compared to an average annual growth of 48% from 2019–2021.<sup>13</sup>

The Voluntary Carbon Market Integrity Initiative (VCMI) seeks to introduce and scale the use of new threshold standards for high-quality carbon credits to help increase the integrity of the market supply.



FIGURE 2 | Lack of urgency, market imperfections and reputational risk are holding corporates back



**Note:** Survey questions this data is based on: “Has your company pledged to be fully net zero by 2050 or sooner?” (n=137); “Does your company claim ‘carbon neutrality’ (or an equivalent term) before reaching net zero?” (n=130); “Which are the complexities that you face/foresee on your engagement with voluntary carbon markets?” (n=127).

**Source:** Voluntary Carbon Markets Survey (n=137); Voluntary Carbon Market interviews

## Reform requirements to build transparency and trust

In addition to critical improvements needed in supply and demand, the transparency of the market urgently needs to be improved. Recent reports suggest that in some cases significant shares of end-user costs do not reach the projects and communities that so acutely need financial support.<sup>14</sup> There are important opportunities for market reform that would increase transparency and ensure that market capital flows to where it should.

Global standards and integrity bodies could play a vital role in defining norms for and instilling confidence in the use of credits. A report by the UN-commissioned High-Level Expert Group on Credible Net-Zero Claims for Non-State Actors supports global standardization – for example, through standardized reporting formats and a global database.<sup>15</sup>

Additionally, consensus on legal definitions of terms such as “net zero” and “carbon neutral” could provide clear guidance and confidence to actors genuinely trying to create positive climate impacts, while reducing opportunities for companies trying to avoid meaningful, difficult actions that mislead consumers and investors.

The need for direct regulation of VCMs is likely to become especially important as the boundaries between voluntary carbon markets, compliance carbon markets and sovereign carbon credit mechanisms under Article 6 of the Paris Agreement increasingly blur. The design of much-needed regulatory regimes can provide upfront clarity as to how and under what conditions VCMs can be used. The recent introduction of the Singapore carbon tax mechanism is an example worthy of further assessment.



3

# Five key recommendations to scale responsible engagement in the carbon market

Leadership will be critical in driving the voluntary carbon market into its next chapter.

To bring the market to its full potential and accelerate climate action, wider private-sector participation with credible near-term decarbonization plans is needed. Companies should step up and commit to meaningful procurement (or generation) and subsequent retirement of high-quality carbon credits that support the environmental and societal benefits beyond their value chain. To help scale meaningful climate action using carbon markets, it is recommended that climate leaders follow five critical steps.

## Step 1:

**Set a decarbonization pathway aligned with scientific recommendations to ensure demand-side credibility in the use of carbon credits**

Companies with credible near-term decarbonization plans need to communicate how offsets will be integrated into those decarbonization plans and will complement, not replace, direct carbon abatement.

## Step 2:

**Acknowledge the urgency of protecting natural carbon sinks and other high-integrity community-based projects**

Companies should integrate their nature and climate strategies into the core of their decarbonization efforts. Doing so is an economically rational lever for any chief executive officer or board that can be part of a broader nature-positive sustainability endeavour, while delivering on other goals such as biodiversity and community development.

## Step 3:

**Adopt and scale leading standards and practices critical to improving quality and establishing credibility of corporate credit use (e.g. the ICVCM or the VCMi)**

There is need for common global standards and more independent third-party verifiers to provide certainty about carbon credits and their use. Yet the slow pace at which standards are evolving and projects are certified has constrained stakeholders' ability to respond. This could push some companies to seek new standards, which consequently leads

to market fragmentation. Market infrastructure needs to be credible and quickly scalable to work.

#### Step 4:

#### Create market transparency through corporate disclosures on climate and nature impact, project types, pricing and transaction costs and flows

Lack of transparency of capital and credit flows creates uncertainty about the actual impact of the market. Participants need to find the right approach to disclosure and compliance that allows scaling and innovation, which may include non-identifiable disclosure aggregation, being more prescriptive in their sourcing strategies, using independent ratings and tapping new technology-based solutions such as measurement, reporting and verification (MRV).

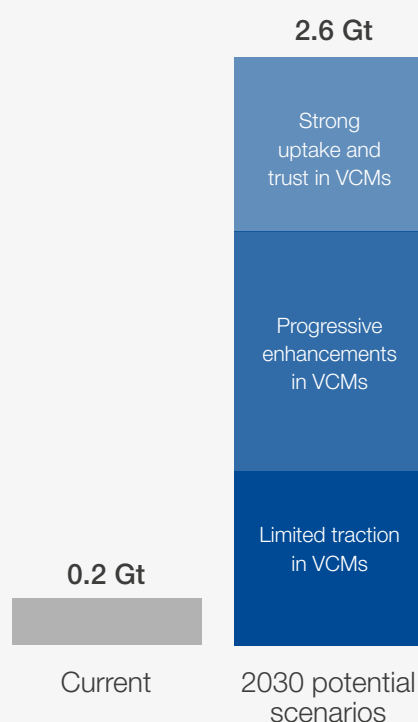
#### Step 5:

#### Amplify corporate commitments to immediate participation at scale through collective action to establish credibility while signalling demand to the market

A collective approach that aligns on credible strategies and focuses on the highest-quality credits can mitigate the risk of perceived greenwashing. It sends a strong signal of support for climate action beyond value chains, which puts corporates on the front foot with their climate change strategies. This helps to encourage more market participation and creates clear demand signals. It will take years for the market and standards to mature, so industry-specific alignment is needed to agree on the right direction while meeting the imperative for individual and collective climate action today.

FIGURE 3 Five actions to drive meaningful participation in the voluntary carbon market

### VCM impact potential (in CO<sub>2</sub>e)



- 01 Set a decarbonization pathway aligned with scientific recommendations to ensure demand-side credibility in the use of carbon credits
- 02 Acknowledge the urgency of protecting natural carbon sinks and other high-integrity community based projects
- 03 Adopt and scale leading standards and practices critical to improving quality and establishing credibility of corporate credit use (e.g. the ICVCM or the VCMi)
- 04 Create market transparency through corporate disclosures on climate and nature impact, project types, pricing and transaction costs and flows
- 05 Amplify corporate commitments to immediate participation at scale through collective action to establish credibility while signalling demand to the market

**Source:** Voluntary Carbon Markets Survey (n=137); Voluntary Carbon Market interviews; Bain & Company database; Net-Zero Tracker; Refinitiv; CDP; IEA; EnerData; World Bank Carbon Pricing Dashboard; Bain & Company analysis

## 4

## Building and evolving the credit portfolio over time

To achieve net zero, companies will need their own strategies to move forward, ones that fit their objectives for climate, nature and wider sustainability.

Best practices and principles are emerging that offer guidance for corporate action and portfolio construction. *The Oxford Principles for Net Zero Aligned Carbon Offsetting* provides one example of a targeted portfolio for carbon credit procurement after committing to decarbonization aligned with science-based pathways.<sup>16</sup>

A strategy encompassing collective action by industry value chain, a portfolio approach to sourcing carbon credits and clear communication of a company's action constitutes a viable pathway. It taps the most economical sources for carbon offsetting today (nature), supports industry investment at scale via common practices and progressively invests in emerging carbon removal technology over time.

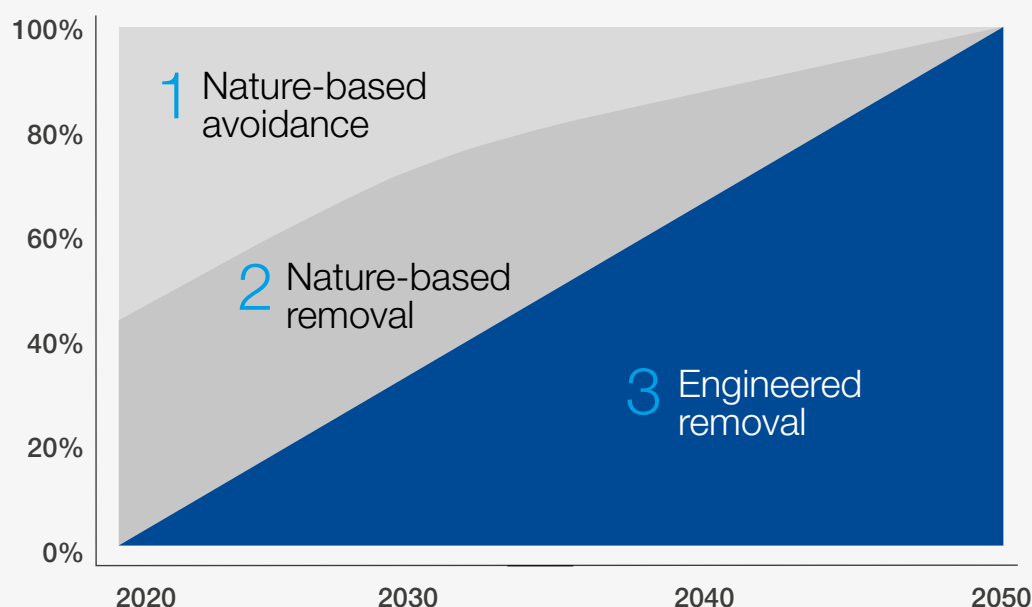
- In the short term, corporates should seek high-quality credits with short-lived storage like those from nature conservation and restoration. These channel much-needed funds into preserving natural carbon stocks by avoiding emissions, reducing emissions and removing carbon. In doing so, they should focus on projects that maximize co-benefits, focusing on natural, biodiverse ecosystems of domestic species (not monoculture plantations) with additional benefits for local communities.
- In the mid to long term, corporates should gradually shift to financing carbon dioxide removals (CDR) with long-term storage. The technologies for this include Direct Air Carbon Capture and Storage (DACCS), Bioenergy with Carbon Capture and Storage (BECCS), Biomass with Carbon Removal and Storage (BiCRS) and enhanced weathering. Engineered and nature-based carbon removal credits should constitute the majority of carbon portfolios after 2040.<sup>17</sup>



## Net-zero-aligned carbon credits portfolio

Illustrative/indicative

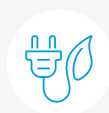
% breakdown of carbon credit portfolio over time



## Best practice in three steps



- 1 Cut emissions and, in the short term, use high-quality avoidance credits from nature conservation



- 2 Shift the portfolio towards nature-based removal, e.g. reforestation



- 3 Remove carbon from atmosphere using engineered solutions

Source: Based on *The Oxford Principles for Net Zero Aligned Carbon Offsetting*

To navigate the more immediate future, the recommendations outlined in this paper suggest a point of departure for corporates to use the voluntary

carbon market well. Wider dialogue is planned to shape an agenda for collective action in 2023 and provide optimal pathways for companies to follow.

# Contributors

## World Economic Forum

### **Antonia Gawel**

Head, Climate Change; Member of the Executive Committee, World Economic Forum, Switzerland

### **Nasim Pour**

Lead, Carbon Removals and Market Innovation, World Economic Forum, Switzerland

## Bain & Company

### **Claudia Brechenmacher**

Senior Manager, Bain & Company, Singapore

### **Dale Hardcastle**

Head of Carbon Markets, Bain & Company, Singapore

### **Henning Huenteler**

Expert Associate Partner, Bain & Company, The Netherlands

### **Ann Siml**

Senior Manager, Bain & Company, United Kingdom

### **Eva Wilde**

Senior Manager, Bain & Company, United Kingdom

# Endnotes

1. Intergovernmental Panel on Climate Change (IPCC), *Sixth Assessment Report: Climate Change 2022: Mitigation of Climate Change*, 2022: [https://www.ipcc.ch/site/assets/uploads/2022/06/SBSTA\\_IPCC\\_WGIIIIPresentation.pdf](https://www.ipcc.ch/site/assets/uploads/2022/06/SBSTA_IPCC_WGIIIIPresentation.pdf).
2. Intergovernmental Panel on Climate Change, *Climate Change 2022, Mitigation of Climate Change*, 2022: [https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC\\_AR6\\_WGIII\\_SPM.pdf](https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf).
3. World Economic Forum, *Forests for Climate: Scaling up Forest Conservation to Reach Net Zero*, 2022: [https://www3.weforum.org/docs/WEF\\_Forests\\_for\\_Climate\\_2022.pdf](https://www3.weforum.org/docs/WEF_Forests_for_Climate_2022.pdf).
4. Beare, Peter, "Natural Climate Solutions and Human Rights", WBCSD, 30 January 2019: <https://www.wbcsd.org/Overview/News-Insights/WBCSD-insights/Natural-Climate-Solutions-and-Human-Rights>.
5. The World Bank, "Forest and Terrestrial Ecosystems (Landscapes)": <https://www.worldbank.org/en/topic/forests>.
6. WWF, "Tropical Rainforests": [https://wwf.panda.org/discover/our\\_focus/forests\\_practice/importance\\_forests/tropical\\_rainforest](https://wwf.panda.org/discover/our_focus/forests_practice/importance_forests/tropical_rainforest).
7. Science Based Targets, *Foundations for Science-Based Net-Zero Target Setting in the Corporate Sector*, 2020: <https://sciencebasedtargets.org/resources/files/foundations-for-net-zero-executive-summary.pdf>; The United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, *Integrity Matters: Net Zero Commitments by Businesses, Financial Institutions, Cities and Regions*, 2022: [https://www.un.org/sites/un2.un.org/files/high-level\\_expert\\_group\\_n7b.pdf](https://www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf).
8. Trove Research, "Trove Research 3Q22 Voluntary Carbon Market Webinar", YouTube, 27 October 2022: <https://youtu.be/Wi9uVW4DwKE?t=808>.
9. Intergovernmental Panel on Climate Change (IPCC), *Sixth Assessment Report: Headline Statements from the Summary for Policymakers*, 4 April 2022: [https://report.ipcc.ch/ar6wg3/pdf/IPCC\\_AR6\\_WGIII\\_HeadlineStatements.pdf](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_HeadlineStatements.pdf).
10. Bain & Company analysis.
11. Trove Research, "Trove Research 3Q22 Voluntary Carbon Market Webinar", YouTube, 27 October 2022: <https://youtu.be/Wi9uVW4DwKE?t=808>.
12. Bain & Company analysis.
13. Verra, Verra Registry, 2022: <https://registry.verra.org/>.
14. Hodgson, Camilla, "Surge of Investment into Carbon Credits Creates Boom Time for Brokers", *Financial Times*, 2 May 2022: <https://www.ft.com/content/739a5517-4de6-43f7-ae47-1ce8d4774d50>; De Haldevang, Max, "BP Paid Rural Mexicans a 'Pittance' for Wall Street's Favorite Climate Solution", *Bloomberg*, 27 June 2022: <https://www.bloomberg.com/features/2022-carbon-offset-credits-mexico-forest-bp/?leadSource=uverify%20wall>.
15. The United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities, *Integrity Matters: Net Zero Commitments by Businesses, Financial Institutions, Cities and Regions*, November 2022: [https://www.un.org/sites/un2.un.org/files/high-level\\_expert\\_group\\_n7b.pdf](https://www.un.org/sites/un2.un.org/files/high-level_expert_group_n7b.pdf).
16. Allen, Myles, Kaya Axelsson, Ben Caldecott, et al., *The Oxford Principles for Net Zero Aligned Carbon Offsetting*, September 2020: <https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf>.
17. Ibid.





---

COMMITTED TO  
IMPROVING THE STATE  
OF THE WORLD

---

The World Economic Forum, committed to improving the state of the world, is the International Organization for Public-Private Cooperation.

The Forum engages the foremost political, business and other leaders of society to shape global, regional and industry agendas.

---

World Economic Forum  
91–93 route de la Capite  
CH-1223 Cologny/Geneva  
Switzerland

Tel.: +41 (0) 22 869 1212  
Fax: +41 (0) 22 786 2744  
[contact@weforum.org](mailto:contact@weforum.org)  
[www.weforum.org](http://www.weforum.org)