Principles for Net Zero Aligned Carbon Offsetting: Practitioners' Handbook

Injy Johnstone and Sindi Kuci

September 2025

Smith School of Enterprise and the Environment, University of Oxford

Executive Summary

- Carbon markets are a key tool for climate mitigation, but without clear guidance, they risk failing to deliver real outcomes.
- The advent of net zero commitments, which foresee remaining emissions at the global net zero date counterbalanced by removals, has further driven the need to understand the critical role carbon markets can play in helping counterbalance ongoing and residual emissions.
- Since their publication in 2020, the Oxford Principles for Net Zero Aligned Carbon Offsetting (the Principles) have illustrated best practices in the design of net zero aligned carbon markets through four key principles. Their uptake over the past five years has highlighted the need for and provided a crucial example of the importance of systemic alignment with net zero.
- The Principles demonstrate that in order to meaningfully contribute to both organisational and global net zero goals, organisational portfolios should reflect an increasing share of durable removals that effectively neutralise emissions organisations cannot internally reduce.
- The Principles have received global recognition and are being increasingly adopted and/or recognised by corporates of different sizes across a variety of sectors, and other actors, including financial institution and policymakers.
- As markers of integrity, the Principles can be used to establish net zero portfolios that are robust, laying out clear end goals and interim trajectories for an organisation's decarbonisation efforts, and transparently differentiate between investments in removals and reductions, as well as between investments used for compensation vs contribution purposes.
- In this way, the Principles can further serve to bring more coherence to the standard and policy landscape related to carbon offsetting.

Table of Contents

Acknowledgements

We would like to thank members of the Oxford Offsetting Principles Practitioners Forum for their useful comments and suggestions.

For more information on Oxford Sustainable Finance Group please visit: sustainablefinance.ox.ac.uk/group

For more information on SSEE, please visit: smithschool.ox.ac.uk/

Suggested citation

Johnstone, I & Kuci, S. *Principles for Net Zero Aligned Carbon Offsetting: Practitioners' Handbook* (2025). University of Oxford Smith School of Enterprise and the Environment Policy Briefing.

Oxford Principles for Net Zero Aligned Carbon Offsetting: Practitioners' Handbook

Injy Johnstone & Sindi Kuci

Smith School of Enterprise and the Environment, Oxford University, South Parks Road, Oxford, OX1 3QY, United Kingdom

1. Introduction

Since their initial release in 2020, the Oxford Principles for Net Zero Aligned Carbon Offsetting have been widely recognised as a rigorous, science-based approach to designing net zero aligned offsetting strategies. Over the past five years, the Principles have occupied a unique position in the ecosystem, connecting existing carbon market practice to the science of net zero.[1] While the uptake of the Principles has been promising, their adoption must drive a paradigm-shift toward net zero alignment, rendering insights into their practice critical.

Transitioning from Principles to practice is nuanced, as it applies differently across jurisdictional contexts and types of actors, from suppliers, buyers, standard-setters and financiers. The Oxford Offsetting Principles Practitioners Forum, convened in 2025, served as a conduit to capture these dynamics by bringing together key stakeholders to identify and dig deeper into what is required for the operationalisation of the Principles.

> *"Principles inspire, but tactics deliver— a net zero future demands that the Oxford Offsetting Principles move from paper to practice. This next phase of OOPs do just that in providing practitioner specifics on how to operationalize these principles in your climate strategy. Having this level of pragmatic action laid out for organizational daily practice will be the difference between pledges that stall and markets that scale"*
>
> – Bee Hui Yeh, Head of Climate Strategy & Solutions, Patch

Drawing from the Practitioners' Forum, this Handbook is designed to assist both private and public actors – to meaningfully apply the Principles in their practice. The Handbook's purpose is twofold: i) to illustrate the range of practice the Principles have inspired and ii) to help guide their future implementation. Section 2 of this Handbook highlights how the Principles have

[1] Johnstone, I., Allen, M., Axelsson, K., Caldecott, B., Eyre, N., Fankhauser, S., Hale, T., Hepburn, C., Hickey, C., Jenkins, S. and Khosla, R., 2025. The revised oxford principles for net zero aligned carbon offsetting. Environmental Research Letters, 20(9), p.091005.

been applied by different types of actors to date. Section 3 explores how best the Principles can be translated to practice, analysing both barriers and opportunities. Sections 4 delves deeper into how organisations have and should apply the Principles, emphasising elements related to design, procurement practices and claims. Lastly, Section 5 highlights the importance of the Principles in further shaping the existing climate standards and policy landscape.

2. Uptake of the Principles: Insights from Practice

> *"The Oxford Offsetting Principles present a simple yet robust framework for institutions to pursue an innovative and integrated pathway toward net zero, emphasizing a phased approach to durable carbon removals."*
>
> – Asitava Sen, Co-Founder & CEO, Carbon Removal India Alliance (CRIA)

Since the release of the original Oxford Principles for Net Zero Aligned Carbon Offsetting in 2020 to their Revision in 2024 and to the time of writing in 2025, there has been a marked shift in their real-world uptake. This is reflected both in general market trends and in specific references to the Principles by organisations.

2.1 Market Shifts

Evidence of broader market trend suggests that progress is being made under each of the four Principles:

- **Principle One: Cut emissions, ensure the environmental integrity of credits used to achieve net zero, and regularly revise your offsetting strategy as best practice evolves**

  Concerns over greenwashing have become a defining feature of recent market practice, partly led by a number of lawsuits against companies for use of carbon credits.[2] Increasing litigation within these markets has contributed to an increasing focus on organisations' internal efforts to decarbonise prior to relying on carbon credits. Such matters became even more prescient in relation to growing evidence related to carbon credit quality. The largest systematic investigation in carbon markets has revealed that 16% of the close to 1 billion carbon credits assessed delivered a real atmospheric impact.[3] Specific investigations into particular project types, such as Reducing Emissions from Deforestation and Degradation

[2] For instance, in *Mayanna Berrin vs Delta Airlines*, Delta Airlines faced a $1 Billion USD class action lawsuit over its carbon neutrality claims related to its reliance on carbon credits.
[3] Probst, B.S., Toetzke, M., Kontoleon, A., Díaz Anadón, L., Minx, J.C., Haya, B.K., Schneider, L., Trotter, P.A., West, T.A., Gill-Wiehl, A. and Hoffmann, V.H., 2024. Systematic assessment of the achieved emission reductions of carbon crediting projects. *Nature communications*, *15*(1), p.9562.

(REDD+), also revealed pervasive over-crediting practices[4], resulting in more cautious approaches to offsetting and an overall 'flight to quality'.[5]

- **Principle Two: Transition to carbon removal offsetting for any residual emissions by the global net zero target date**

  While carbon removals in the form of nature-based afforestation/reforestation (A/R) projects have been present since the beginning of carbon market transactions, they have historically remained at a low level, representing approximately 3% of overall transactions.[6] However, these trends have begun to shift significantly within voluntary carbon markets, with increasing retirement of removal credits.[7] Nature-based removals, in particular, have seen a significant increase in offtake deals, with accompanying rises in prices.[8] Unlike other parts of the legacy voluntary carbon market where there is in excess of 1 billion unretired carbon credits, there were more retirements than issuances in nature-based removal credits in 2024.[9]

- **Principle Three: Shift to removals with durable storage (low risk of reversal) to compensate any residual emissions by the net zero target date**

  There is growing understanding of the role played by durable removals within offsetting strategies. As a testament, pre-purchases of durable carbon removal in Q2 of 2025 exceeded the total contracted volume of all durable carbon removal up until then.[10] Indeed, such investments were the reason why although durable carbon removal helped maintain overall market value of approximately USD $1.4 Billion USD, despite the halving of the legacy carbon market since 2022.[11]

[4] Greenfield, P. 2023. Revealed: more than 90% of rainforest carbon offsets by biggest certifier are worthless, analysis shows. https://www.theguardian.com/environment/2023/jan/18/revealed-forest-carbon-offsets-biggest-provider-worthless-verra-aoe.
[5] AlliedOffsets. 2025. "2024 End of Year Report: VCM 2024 Review and Emerging Trends for 2025". p3. https://alliedoffsets.com/wp-content/uploads/2025/01/VCM-2024-Recap-Emerging-Trends-for-2025. https://alliedoffsets.com/wp-content/uploads/2025/01/VCM-2024-Recap-Emerging-Trends-for-2025.
[6] Meitner, L., 2024. Voluntary Carbon Markets: A Critical Assessment. Institute for International Political Economy Berlin. Working Paper, No. 246/2024, p.5.
[7] AlliedOffsets. "2024 End of Year Report: VCM 2024 Review and Emerging Trends for 2025". 2025, p.9.
[8] *Ibid.* at p.21.
[9] *Ibid.* at p.24.
[10] CDR.FYI. 2025. 2025 Q2 Durable CDR Market Update. https://www.cdr.fyi/blog/2025-q2-durable-cdr-market-update-biggest-quarter-ever.
[11] AlliedOffsets. "2024 End of Year Report: VCM 2024 Review and Emerging Trends for 2025". 2025, p.10.

- **Principle Four: Support the development of innovative and integrated approaches to achieving net zero**

  Compared to the time in which the Principles were first released in 2020, there is now an increasing raft of measures supporting the development of net zero aligned offsetting pathways. Governments have increasingly established mechanisms to encourage the viability of carbon removal through price support schemes, such as through 45Q in the United States[12] and the Greenhouse Gas Removal Business Model in the United Kingdom.[13] The private sector has developed at least 12 distinct levers through which to approach carbon removal development, within and beyond their internal value chain.[14]

2.2 The Principles in Organisational Practice

While there has been strong anecdotal evidence of the uptake of Principles in organisational practice, there has been no systematic quantitative or qualitative study of the full breadth of their impact to date. At the beginning of 2025, internal research undertaken by Oxford Net Zero sought to identify how the Principles have been operationalised by organisations across different sectors. This research was based on qualitative and quantitative analysis across two databases; the 2024 Forbes 2000 and the SBTi Net Zero Committed Company lists. To rate the level of uptake of the Principles across sectors, the following set of ratings was used:

- **Strong Implementation**: Organisations use clear statements to outline how business actions and strategies align with at least three of the four Principles.
- **Starting Implementation**: Organisations use broad statements with limited or inaccurate references to each of the four Principles.
- **Intention to Implement**: Organisations indicate or plan to implement the Principles before taking action on them.
- **Informative Recognition of Principles:** Organisations describe or reiterate the Principles to provide useful information for readers or clients about offsetting.
- **Referencing the Principles:** Organisations cite the Principles.

We found that the Principles are currently being applied across a range of sectors, with variation in their uptake. Companies within the **financial sector** (financial institutions) referenced the Principles significantly more than any other sector analysed, followed by companies in the sustainability sector, those in the regulatory and compliance sectors, and

[12] Global CCS Institute. 2025. U.S. Preserves and Increases 45Q Credit in “One Big Beautiful Bill Act. https://www.globalccsinstitute.com/news-media/latest-news/u-s-preserves-and-increases-45q-credit-in-one-big-beautiful-bill-act/.

[13] Department for Energy Security & Net Zero. 2025. Greenhouse Gas Removals (GGR) Business Model summary. Available at: https://assets.publishing.service.gov.uk/media/68ad77c2969253904d1557ff/greenhouse-gas-removalbusiness-model-summary-august-2025.pdf

[14] Johnstone, I. (2024), “Investing in Carbon Removal: Levers for the Private Sector”, University of Oxford Smith School of Enterprise and the Environment Working Paper 24-1.

those in the consultancy and government sector. Of the organisations largely referencing the Principles, around 86% were **large companies**, rather than SMEs, with 3% being global initiatives.

Among the analysed actors, the vast majority had only started implemented the Principles or otherwise had recognised them. Significantly, 60% of the sectors analysed referenced the Principles as a key source of guidance and information. Only 9% of the organisations analysed in this study had strongly implemented the Principles. The majority of strong implementation references were found within the financial institution sector, although this only made up 9% of the evidence/reports found. In contrast, 67% of the companies in the sustainability services sector demonstrated a clear understanding of the Principles through informative recognition. However, despite providing information on the Principles for clients and readers, only one direct implementation reference was found in this sector.

"Our approach to reducing GHG emissions goes beyond minimising our own emissions – it also comes with offsetting the remaining emissions through carbon credits… The IPCC has made it clear that the deployment of carbon-dioxide removal (CDR) to counterbalance hard-to-abate residual emissions is unavoidable if net zero GHG emission are to be achieved. As such we will progressively move from carbon-avoidance offsets (such as forest protection) to high-integrity carbon-removal offsets like Climeworks and biochar as outlined in the Oxford Offsetting Principles". [15]

"Our offsetting practices have evolved over the years and in 2022 we set increased ambitions informed by current best practices…the Oxford Offsetting Principles. As from 2022, we purchase 100% carbon removal offsets for our internal operations". [16]

Box One: Examples of the Principles in Practice

This analysis also highlighted a number of implementation gaps. Common shortfalls included organisations failing to reference all four Principles, or interpreting the Principles as encouraging a mix of all project types as opposed to a transition to Category V by the project start date.[17] Therefore, whereas there has been promising increasing uptake of the Principles across sectors, there are still gaps and shortcomings that can be improved upon.

[15] Partners Group. 2024. Sustainability Report 2024. P.61P.https://www.partnersgroup.com/~/media/Files/P/Partnersgroup/Universal/shareholders/reports-and-presentations/2025/sustainability-report-2024.pdf

[16] Dankse Bank. 2023. Climate Action Plan: Our Roadmap to Net Zero. P.42 https://danskebank.com/-/media/danske-bank-com/file-cloud/2023/1/danske-banks-climate-action-plan.pdf

[17] Axelsson, K. & Johnstone, I. 2024. Top 5 common misconceptions about how to use the Oxford Offsetting Principles. https://www.smithschool.ox.ac.uk/news/top-5-common-misconceptions-about-how-use-oxford-offsetting-principles

3. Putting the Principles into Practice

The Oxford Offsetting Principles Practitioners Forum was established at the beginning of 2025 to understand how the Principles were being applied in practice and how such efforts could be further built on. In the process of establishing the Forum, a number of common themes regarding operational opportunities for the Principles were identified including:

- **Ensuring transparency, integrity and trust:** The Principles create an opportunity to build trust in carbon markets, by improving i) the environmental integrity of carbon crediting programmes, methodologies and monitoring, reporting and verification (MRV) practices and ii) trust in carbon unit procurement and reporting, therefore enhancing clarity and transparency for organisations.
- **Establishing best practices, policy frameworks:** Through their tailoring, the Principles can help avoid fragmentation of more prescriptive and divergent regulation and policy, fostering market growth and demand, advancing and building collaboration and partnerships and developing long-term carbon removal solutions.

Liverpool FC & 1PointFive recently announced a collaboration to durably remove all emissions from their latest football shirt with Direct Air Carbon Capture and Storage technology, illustrating that 100% durable removal is possible for product emissions. [18]

Box Two: Example of applying the Principles at a product level

Among applicants, carbon dioxide removal (CDR) industry associations, industry, civil society, end-to-end carbon platforms and financial institutions also identified specific opportunities for the Principles to foster market growth, build more market demand and liquidity, lower barriers for entry, and strengthen alliances between investors and sellers.

In addition to opportunities, applicants also identified common barriers and challenges to operationalising the Principles, including:

- **Market demand and trust:** Principles uptake could be hindered by concern about offsetting practices at large, and the dearth of trust involved in ascertaining whether a carbon credit represents the ton.
- **Implementation and access for SMEs:** Businesses of a smaller or medium size (SMEs) specifically face barriers in accessing high quality durable carbon removals and

[18] 1PointFive. June 2025. Liverpool FC and 1PointFive announce product collaboration for merchandise using direct air capture technology. Accessible at: https://www.1pointfive.com/news/liverpool-fc-and-1pointfive-announce-product-collaboration-for-merchandise-using-direct-air-capture-technology

lack internal capacity in developing robust carbon crediting strategies, limiting their ability to robustly implement the Principles.

> ***I found that resource, capital constraints, and knowledge gaps were the biggest issues I encountered when trying to apply the principles to my company's offsetting approach. Certain aspects of the Principles were not feasible for us, such as setting and regularly re-examining carbon removal targets. Developing a net-zero aligned portfolio is also difficult. For example, this year, my company could only afford 3 carbon credits from durable, longer-term removal projects. Offtake agreements and other innovative finance mechanisms were also out of reach for my company due to costs***
>
> **– Practitioners Forum Participant from an SME**

Box Three: Insights into Barriers Operationalising the Principles as an SME

Despite these challenges, there is significant prospect for the Principles to become fully accessible by a range of organisations. Illustratively, best practice applications of the Principles include:

- **Designing Net Zero Aligned Portfolios:** Organisations developing their own net zero aligned offsetting portfolios, or in their absence, using the Principles as a framework to provide guidance to clients on net zero aligned offsetting.
- **Capacity Building and Awareness:** Organisations educating others in the value of the Principles and the need to grow the role of removals towards a global state of net zero.

4. Applying the Principles as an Organisation

Understanding an organisation's necessary emissions reductions on the path to net zero is foundational to setting a net-zero-aligned offsetting strategy. Only from this starting point can a credible project portfolio that adheres to the Principles be established. A Principles-aligned portfolio ensures that all residual emissions are counterbalanced with carbon removal projects that have the lowest risk of reversal by the net zero target date, with interim milestones along the way. This approach to developing a portfolio also hinges on robust procurement practices for removal units. On the demand side, clarity as to the claims made on the basis of such procurement is essential to maintain organisational credibility.

4.1 Portfolios

Identifying a net zero aligned pathway is critical for the development of a portfolio aligned with the Principles. The foundation for such a pathway is deep internal emissions cuts. From this basis, organisations can then identify emissions they cannot reduce internally and create a clear net zero aligned trajectory for both their residual emissions and measures to compensate

or neutralise them. The emission reduction pathway and the accompanying offsetting portfolio should be clear and adequately ambitious from the outset, for instance, by progressively increasing the fraction of carbon committed to permanent storage, with the ultimate purpose of moving towards 100% CDR with the lowest risk of reversal to offset residual emissions at the net zero target date. This portfolio could be a mix of project types that moves towards CDR with the lowest risk of reversal or takes the form of investment in units such as "progressive offsets" or "prosets", which adjust the permanence of fractionalised CDR investment from less durable to more durable CDR over time.[19] To this end, the following aspects are critical to establishing a net zero aligned portfolio:

- **Clear End Target & Interim Trajectory:** Including dates and expected volumes.
- **Portfolio Composition**: Ensuring transparency over both qualitative and quantitative dimensions of the offsetting portfolio.[20]
- **Portfolio Purpose**: Identifying the emissions that are being compensated, or the manner in which investments are otherwise contributing to net-zero.

The strategy to meet organisational net zero targets should evolve over time, in line with changes in scientific, technological, and regulatory advances, such as those concerning what mitigation abatement options are practicable within one's own value chain. A portfolio of mitigation investments beyond the value chain could and should reflect the i) evolution in sector-specific decarbonisation pathways and transitional emissions and ii) organisational capabilities based on the requisite scale of the investments required. Offsetting portfolios can be either developed by the organisations themselves or by portfolios curated externally, in alignment with the Principles, such as those offered by Patch[21] and CNaught.[22]

Developing a Principles-aligned portfolio also requires setting clear and transparent **interim targets**. Such targets should be sector-specific and include i) qualitative and quantitative dimensions of the offsetting portfolio, including the fraction of units acquired per project category and the level of budget spent on each, and ii) comparisons of these dimensions to those of previous years. It is expected that the proportion of durable carbon removal in offsetting portfolios should be ratcheted up on an annual basis. Periodic reporting and reviews of a net zero-aligned offsetting strategy should also occur in tandem with efforts to track and report emissions and emissions reduction measures. In this manner, reporting on any net zero-

[19] Hickey, C., Fankhauser, S., Smith, S.M., Allen, M. (2023). A review of commercialisation mechanisms for carbon dioxide removal. Frontiers. Accessible at: https://www.frontiersin.org/journals/climate/articles/10.3389/fclim.2022.1101525/full

[20] NB: It is not a requirement that a Principles aligned offsetting portfolio contains all the project types the Principles identify but rather that it signifies a transition to Category V: Durable Removals with the lowest risk of reversal, especially for the part of the portfolio addressing compensating for any remaining or residual emissions.

[21] Patch. December 2023. Building high-impact carbon credit portfolios. Available at: https://www.patch.io/downloads/building-high-impact-carbon-credit-portfolios-a-buyers-guide

[22] CNaught, 2025. Curated high-integrity portfolios. Available at: https://www.cnaught.com/science-backed-portfolio.

aligned offsetting portfolio target should also include reporting progress toward internal emission reduction targets. Reporting should be disclosed both internally to the organisational board or c-suite and publicly reported. Such reporting should comply with robust disclosure standards, for instance, the International Financial Reporting Standards' Sustainability Disclosures[23] and the European Union's Corporate Sustainability Reporting Directive[24]to outline progress toward interim targets and the ultimate goal of net zero alignment.

Forward planning can also facilitate the development of net zero-aligned portfolio pathways. Such planning should include considerations of the expected average price per tonne of emission reductions or removals, based on i) an organisation's existing portfolio allocation, ii) market data (e.g. cost curves by technology type), and iii) the specific sector an organisation is part of (informing capacity to pay), among others. Such planning is essential as currently, the market for durable carbon removal is a highly concentrated and fairly illiquid market, with only a limited number of companies investing in carbon removal units and a forward delivery time of 3-years.[25] In this market, demand tends to be skewed towards carbon removal activities with lower levels of durability, which also require a less capital-intensive approach for their development, such as biochar. Therefore, the current composition of the market underscores the need for proactive procurement planning across a range of pathways to ensure that organisations have a coordinated plan to reach and sustain net zero, while also meeting their interim milestones.

Forward planning should also include setting an **internal carbon price** to ensure alignment with internal decarbonisation measures.[26] Budget spending should clearly delineate between investments in internal decarbonisation measures and a net zero-aligned offsetting portfolio. Forward planning can also help ensure the ramp-up of finance towards durable and low-risk carbon removal development in an equitable manner, through tools such as advance market commitments and direct project financing, reflecting the Principles' call to build an "innovative and integrated landscape for CDR financing". Contributions to this landscape may vary depending on organisational scale, budget capacity, and other capabilities (e.g, SMEs vs large enterprises). Platforms such as carbon credit rating agencies can further help organisations focus their financing efforts on high-quality projects.

[23] IFRS. 2023. General Sustainability Related Disclosures. https://www.ifrs.org/projects/completed-projects/2023/general-sustainability-related-disclosures/
[24] EU Commission. Corporate Sustainability Reporting. https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en
[25] Fuss, S., Johnstone, I., Höglund, R., Walsh, N. Chapter 4: The voluntary carbon market. in The State of Carbon Dioxide Removal 2024 – 2nd Edition (eds. Smith, S. M. et al.). https://www.stateofcdr.org.
[26] See Patch, BCG & University of Oxford. 2025. Guidelines for setting a net zero aligned internal carbon price. https://netzeroclimate.org/wp-content/uploads/2025/09/Guidelines-for-setting-a-net-zeroaligned-internal-carbon-price-20250910-1.pdf.

4.2 Procurement Practices

Building a net zero aligned offsetting portfolio requires securing access to high quality carbon projects and stimulating demand for them in the future. Robust procurement practices are essential to ensure that terms for these contracts fairly share the unique benefits and risks that they can yield.

The purchase of carbon removal (which is often but not always limited to carbon credits) typically take the form of bilateral multi-year offtake agreements. Predicated on the *promise of* rather than the *immediate* delivery of units, these types of agreements bear risks for both suppliers and buyers. To create and execute offtake agreements, **suppliers** are faced with a range of challenges, including due diligence requirements, the cost of capital to develop carbon removal projects and associated fundraising barriers, regulatory changes such as in government subsidies, uncertainties in MRV protocols and the future financial viability of the buyer to purchase the unit as agreed. Against rapidly shifting and complex regulatory and scientific contexts, suppliers bear the responsibility of protecting buyers from delivery risk, such as through reimbursement or other indemnity provisions. Suppliers should also protect and reward early committers from future price decreases in carbon removal in the case of scalability, such as through "most favoured nation" clauses.

On the other hand, **buyers** also face risk of future non-delivery of those units. However, they can have recourse to a range of options to help mitigate this risk, including carbon insurance. When purchasing carbon removal, buyers should consider volumes, price and cost perspectives, and further differentiate between financing for neutralisation targets vs for general offsetting approaches. They should further ensure the methodological rigour of carbon removal projects they invest in. More specifically, these methodologies should match existing and emerging certification requirements and that they are protected against MRV risks via robust contract terms.

In order to mitigate the risks of non-delivery or underperformance of any one project or category of project, it is recommended that buyers diversify their procurement practices and ensure a steady, reliable and growing supply of carbon removal that can be used to counterbalance unabated emissions. The reliability of such units should be clearly ascertained by third-party actors, such as carbon credit rating agencies. Buyers should take time to understand the methodologies and processes followed by the ratings agencies they choose to use, to ensure they are comfortable with the accuracy of their risk assessments. Carbon credit insurance products can also provide a critical, but distinct, function in protecting buyers against non-delivery or reversal risks. To aggregate demand and scale supply, **robust regulatory settings** and **strong government signals** are also imperative as these can help ensure suppliers are scaling high-integrity projects and improving delivery track records, while buyers are making safe claims on units procured.

4.3 Claims

The Principles provide guidance on demand-side integrity concerning the responsible and ambitious use of carbon credits, including how they can be used to inform credible **compensation** and **contribution-based claims**. Compensation-based claims relate to counter-balancing an entity's ongoing emissions. They can be contrasted to claims based on contributing to global temperature stabilisation goals and a Paris-aligned future. Principles Two and Three recommend that compensation-based investments require a transitional portfolio to ensure that emissions are fully balanced by durable carbon removal by the global net zero target date. Contribution claims, by contrast, can range from financing *additional* ex-post or ex-ante mitigation activities outside of a company's internal efforts to decarbonise its value chain, to financing adaptation and loss and damage initiatives, or engaging in political advocacy–reflective of Principle Four.

To design contribution portfolios, companies can utilise their unique spheres of influence–such as their unique product, purchasing and political power.[27] In the absence of regulatory and legal certainty surrounding claims, the Principles can provide a pathway forward for both public and private actors in their contribution and compensation targets. Boundaries between compensation and contribution claims should be drawn through transparent disclosure and the recording of these activities under separate ledgers. Conflation of these ledgers, e.g. through accounting for credit-based mitigation activities designated for offsetting and those for contribution, can lead to double claiming. Careful and transparent reporting is also needed on net and gross emissions, to ensure that entities are safeguarding adequate credits to address their residual emissions at the global net zero target date.

5. Applications Beyond the Organisation: From Practice to Policy

There is an extant need to embed a net-zero aligned approach into standards and policies. To date, the Principles have been implicitly and explicitly recognised in various standard and policy settings. The continuous embeddedness of the Principles into future regulation can promote coherence and net zero alignment across the broader climate policy ecosystem.

The net zero standard and policy landscape is fast evolving. Multiple standards with different mandates are developing cross-sectoral guidance on net-zero aligned pathways for companies and other non-state actors, including the Science Based Targets Initiative (SBTi) and International Organisation for Standardisation (ISO). While competition between standards can lead to innovation and higher ambition, it can also lead to complexity and

[27] Axelsson, K., Wigg.C., & Becker, M. 2023. Is impact out of scope? A call for innovation in climate standards to inspire action across companies' Spheres of Influence. Carbon Management 15(1). https://doi.org/10.1080/17583004.2024.2382995

fragmentation. Enhancing interoperability is important to creating convergence on net zero standards and, in turn, fine-tune their operationalisation at an organisational level. While the Principles have been integrated into some standards and policies, there is still scope *for* and value added *by* scaling up their integration and alignment, towards their translation into more specific prescriptive guidance.

Principle 4(E) speaks directly to the need to incorporate the Principles into regulation and standard-setting for net zero. This could include advocating for specific interim and long-term carbon removal targets to build up the volumes needed to reach net zero without deterring emissions reduction or nature targets. It could also include supporting the development of governance institutions and recognised industry standards that would ensure that carbon removals are effective, well-monitored, and have clear liability.

The Principles have already been reflected or integrated into a range of domestic, regional and international standards and policies, including The White House's Voluntary Carbon Markets Joint Policy Statement and Principles.[28] Other standards or policies might not directly integrate or explicitly reference Principles but are still aligned with or reflect approaches found in the Principles, e.g. the EU Carbon Removals and Carbon Farming Certification (CRCF)[29], and iterations of Bill SB308 in California, then named the Carbon Dioxide Removal Market Development Act.[30] However, there is variation in the integration and use of Principles within this landscape. Hallmarks of Principle One, Two, and Three are typically expressed more than Principle Four, which highlights the need for more holistic organisational engagement with and development of net zero aligned offsetting portfolios. Nevertheless, concepts embedded in Principle Four are becoming increasingly prominent, for example, in relation to the need to track interventions that lie in actions beyond greenhouse gas inventories.

Despite their increasing uptake, there is an opportunity for the Principles to inspire the design of future standards and policies as well as add more nuance in relation to the implementation of existing ones. Guidance grounded in science is crucial to instilling trust for organisations currently operating in a shifting regulatory landscape. The increasing interoperability of the Principles with standards and policies can allow companies to confidently integrate portfolio transitions over time. Examples of such inter-operability between the Principles and policies and standards respectively, include Switzerland's Climate and Innovation Act[31] mandating

[28] The White House. May 2024. Voluntary Carbon Markets Joint Policy Statement. https://home.treasury.gov/system/files/136/VCM-Joint-Policy-Statement-and-Principles.pdf
[29] European Commission. 2025. Carbon Removals and Carbon Farming. https://climate.ec.europa.eu/eu-action/carbon-removals-and-carbon-farming_en

[30] California Legislature. Senate Bill No. 308. Carbon Dioxide Removal Market Development Act. [Legislative Council Digest]. https://legiscan.com/CA/text/SB308/id/2814029#:~:text=SB%20308%2C%20as%20amended%2C%20Becker,regulating%20sources%20emitting%20greenhouse%20gases.
[31] Swiss Federal Authorities. January 2025. Climate: Federal Council Approves New Reductio Targets under the Paris Agreement. https://www.news.admin.ch/en/nsb?id=103949

corporate carbon removal purchases, or the SBTi proposing interim neutralisation milestones in the next iteration of its Corporate Net Zero Standard.[32]

What is further needed is more specific illustrative guidance of how the Principles' requirements can translate into practice, particularly in providing clarity and certainty around the incorporation of durable removals in net-zero aligned transition pathways across industries. Practical guidance could facilitate the design and operationalisation of transitional net zero aligned offsetting portfolios in different sectors. Such guidance can be particularly important in assisting organisations with limited capacity, such as SMEs, to determine neutralisation pathways. This guidance could be further implemented in the context of government procurement schemes, applying both to insetting and offsetting efforts.

Governments and internationally recognised standard setters have a significant role to play in scaling procurement of high-integrity carbon units for net zero aligned offsetting. Both can increase market actors' confidence and reduce risks in claim-making, by clearly linking the types of units procured to specific end-uses.

Standards setters can encourage interim purchasing milestones to ensure organisations are on track for their neutralisation targets. To further shore up buyers' confidence and spur supply, these entities should further ensure interoperability between MRV protocols and the fungibility of credits between markets, reducing protocol and jurisdictional barriers for cross-market trading. On the other hand, governments can further catalyse CDR markets through interventions, such as public procurement mechanisms and arrangements for contracts for difference. Blended public-private procurement approaches can further address reputational concerns, de-risking investment in long-term CDR pathways. Finally, governments should robustly assess and publicly endorse eligible standards. These approaches can help overcome barriers to Principles aligned procurement, bringing offsetting strategies in line with both actor-specific and global net zero targets, in alignment with the Principles.

6. Summary

The Oxford Offsetting Principles are an important tool in introducing the way carbon markets can be used to meaningfully contribute to climate mitigation. A study conducted by Oxford Net Zero at the beginning of 2025 found increasing uptake of the Principles by corporate actors. Strong implementation of the Principles was typically found in financial institutions, whereas sustainability services informatively recognised them, using them as guidance for clients and other stakeholders. The majority of organisations adopting the Principles in their climate action plans or annual sustainability reports are large rather than Small and Medium enterprises.

[32] SBTi. September 2024. The SBTi Corporate Net Zero Standard revision expanded to refine approach to neutralisation. https://sciencebasedtargets.org/news/the-sbti-corporate-net-zero-standard-revision-expanded-to-refine-approach-to-neutralization

The four Oxford Offsetting Principles inform actors, both private and public, on how to reach their organisational net zero targets and contribute to global net zero through high-integrity offsetting practices. They emphasise the importance of organisations reducing their in-house emissions first to the greatest degree possible and then diversifying their portfolios to increasingly include durable carbon removal projects with lower risk of reversal. Net zero aligned portfolios should be designed with this project composition in mind, and identify a clear end-purpose and interim approaches. Portfolios also hinge on procurement practices and the state of the carbon removal market. To date, procurement of durable carbon removal is constrained as the market is highly illiquid and requires stronger demand signals from both public and private actors, as well as equitable sharing of responsibilities for carbon removal scaling from both buyers and suppliers. Lastly, net zero aligned offsetting at an organisational level requires robust claim making. Compensation or neutralisation claims for residual emissions should be made only through durable carbon removal. Less durable carbon units, including from ex-ante mitigation activities, can be used for contribution claims instead beyond value chain mitigation.

The Principles not only have the potential to shape organisational approaches to offsetting but can also introduce net-zero aligned approaches to net zero policies and standards. The Principles have already been adopted in a series of domestic regulations across jurisdictional contexts and if more widely adopted, can bring about more coherence within the currently fragmented climate standards and policies regulatory landscape.