

White paper

Version 2.0

Guidance for setting an internal carbon fee

CLIMATE SENTINELS
78° 13' 12" N,
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DEFINITIONS

INTERNAL CARBON FEE	A financial charge a company imposes on itself for each ton of CO ₂ emissions it generates, intended to fund external climate projects and incentivize emission reductions.	CARBON CREDITS	Certificates representing a reduction or removal of carbon dioxide, which can be traded. They have traditionally been used to offset emissions from companies' operations.
CARBON PRICE	An internal tool used by companies to assess the financial impact of CO ₂ emissions on business operations, considering potential future regulations and carbon pricing mechanisms.	NET-ZERO	A state achieved when the amount of greenhouse gas emissions is balanced by the amount removed from the atmosphere, reducing the net emitted amount to zero.
SCIENCE-BASED TARGETS (SBT)	Goals set by companies to reduce greenhouse gas emissions in line with the latest climate science recommendations to limit global warming to well below 2°C above pre-industrial levels.	CARBON DIOXIDE REMOVAL (CDR)	Techniques and technologies used to extract carbon dioxide directly from the atmosphere and securely store it, or by enhancing natural processes that absorb CO ₂ .
SCOPE 1, 2, AND 3 EMISSIONS	Scope 1 covers direct emissions from owned or controlled sources. Scope 2 covers indirect emissions from the generation of purchased energy. Scope 3 includes all other indirect emissions that occur in a company's value chain.	CARBON EMISSION INTENSITY	A measure of CO ₂ emissions produced per unit of economic output, often used to compare the environmental performance of companies across different industries.
MARGINAL ABATEMENT COST	The cost associated with reducing an additional unit of emissions, useful in evaluating the financial effectiveness of different emission reduction strategies.	CORPORATE CLIMATE CONTRIBUTIONS	Financial investments made by companies into projects or technologies that aim to reduce the concentration of greenhouse gases in the atmosphere, beyond their own emission reductions.
SOCIAL COST OF CARBON (SCC)	An estimate of the economic damages associated with a one-ton increase in CO ₂ emissions in a given year, encompassing changes in net agricultural productivity, human health, property damages from increased flood risk, changes in energy system costs etc.	CORPORATE CLIMATE STEWARDSHIP	The responsibility and actions taken by companies to manage and reduce their impact on global climate change, including efforts to decrease greenhouse gas emissions, enhance sustainability, and support environmental conservation projects.



ABOUT MILKYWIRE

Milkywire is a Stockholm-based impact platform that enables companies to credibly take responsibility for their emissions through contributions-based impact funds. Founded in 2018, Milkywire has emerged as a leading provider of best practice aligned alternatives for companies to fund the solutions needed to reach global net-zero. Today, Milkywire works with sustainability leaders such as Klarna, Spotify, and ING Bank, and has funded more than 125 impact organizations in over 40 countries.

ABOUT THE AUTHOR

Robert Höglund is a carbon dioxide removal and climate expert. He manages Milkywire's Climate Transformation Fund, co-founded the CDR market overview CDR.fyi, works with the NGO Carbon Gap, and writes reports and articles on carbon removal and corporate climate contributions.

He is also a member of the EU Expert Group on Carbon Removals, the Science-based Target initiative's (SBTi) Technical Advisory Group and the board of the KTH-led research program, Mistra sustainable consumption.

Robert previously headed Oxfam Sweden's policy and communications team and founded the Climate Goal Initiative in Sweden.



ROBERT HÖGLUND

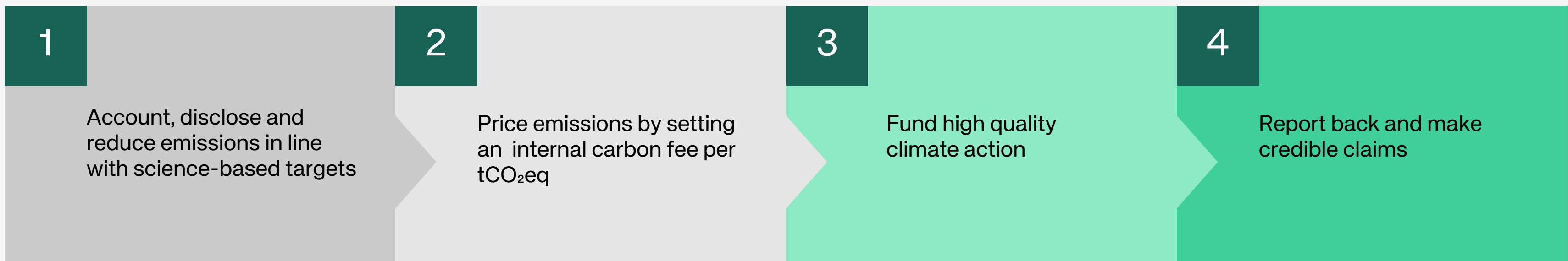
SBTi Expert Advisory Group,
EU carbon removal expert group, Founder
of the Climate Goal Initiative



The four steps to credible climate action

Leading frameworks (e.g. [SBTi](#), [WWF/BCG](#), and [Gold Standard/Milkywire](#)) all recommend a similar four-step approach to what constitutes credible climate action, showing a clear consensus on what responsible businesses should do:

In addition to reducing emissions in line with science-based targets, companies should set an internal carbon fee and contribute to climate action. In this white paper, we explore the internal carbon fee concept in detail and outline practical steps for how companies can approach the topic.



What is an internal carbon fee?

The terms internal carbon fee and internal carbon pricing are sometimes used interchangeably, and while they both center around assigning a monetary cost on CO₂ emissions for their impact on society, they differ in application.

An internal carbon price (also called “shadow price”) is primarily used to evaluate the impact of mandatory carbon prices on business operations and as a tool to identify potential climate risks.

An internal carbon fee (also called “tax”) takes the idea of carbon pricing a step further. It involves the company actually charging itself a fee for every ton of carbon emissions it produces. In turn, the fee generates a budget that can be spent on external climate projects.

The fee can be differentiated between emissions that a company controls (e.g. Scopes 1-2, and travel emissions) and for emissions where the responsibility is shared (remainder of Scope 3). This can be done in more ways, such as by charging different fees for upstream and downstream Scope 3 emissions.

While carbon pricing is a well-established practice among companies, significantly fewer have yet implemented an internal carbon fee, among which Klarna, Microsoft, and Ben & Jerry's, and Swiss Re are notable examples.



Why an internal carbon fee?

Internal carbon pricing as a contribution logic (i.e. an internal carbon fee) is an important shift away from traditional offsetting. It builds on the concept of voluntarily taxing ongoing emissions and using the funds to strategically support climate projects that help bring society closer to global net-zero.

By doing so, companies can move away from making neutrality claims that are difficult –if not impossible– to verify (i.e. greenwashing), and move towards contribution claims for addressing ongoing emissions and supporting projects beyond their immediate value-chains according to best practice.

Thus, the carbon fee driven model enables a greater focus on impact quality. The approach is promoted by leading frameworks such as the [WWF/BCG Blueprint for corporate climate action](#), as well as by the [SBTi](#). This endorsement, coupled with its adoption by numerous forward-thinking companies, underscores its effectiveness and potential for widespread impact.

Through the implementation of an internal carbon fee, companies are not only able to demonstrate a genuine commitment to climate stewardship but also set a precedent for industry-wide action.



What is a credible fee level?

Companies who are able should set a fee that fully accounts for the environmental and societal costs of their emissions. Determining this fee involves two primary approaches:

- Set the fee to the cost of durably removing and storing CO₂ from the atmosphere. Today, that cost is in the hundreds of US dollars per tonne for most methods, but industries and governments target \$100 per tonne as a likely achievable cost in the future. The research group, New Climate Institute has determined €100 per tonne as a credible level for corporate climate contributions based on the marginal abatement cost.
- Another approach is tie the fee to the damage done by a tonne of CO₂ emitted and not removed. This is estimated with a so-called social cost of carbon. There are various estimates. A recent paper in Nature puts it at \$185. The German Federal Environment Agency recommends using a cost level of €201 per tonne CO₂, and the UK and US government has proposed social costs of carbon very close to this.

There is no exact answer to what constitutes a credible fee, but given the above reasoning, 100-200 USD per tonne can be considered a credible range. A company may start at the lower end and raise the fee as it reduces its emissions, while accounting for inflation since the amounts above are stated in 2021 dollars or earlier (see page 8 for estimations).

The companies with the lowest emissions have the highest ability to set a credible fee

In The Carbon Gap report, Bridging the Ambition Gap^{*}, a framework describes when companies should spend money on external climate projects. The report shows that low-emitting industries have the greatest possibility to set an ambitious carbon fee. In the sample analyzed, firms with 15% of the emissions generated 85% of total corporate earnings, being the ones that could implement a credible high fee for external projects.

^{*}Note: The Carbon Gap report is co-authored by Robert Höglund, who also authored this white paper.



Accounting for inflation

Adjusting carbon fees for inflation is crucial to maintain their effectiveness over time. A \$100 fee in 2021 would be equivalent \$115 in 2024.

An unadjusted fee loses its ability to cover the true costs of carbon removal or the damages caused by emissions, making the initial fee less relevant in the mid- to long-term.

Inflation adjustment ensures that the fee continues to reflect the current economic value, preserving its integrity and purpose. This process aligns with the principle of internalizing the full environmental and societal costs of emissions, thereby ensuring that companies continue to contribute an amount that is truly reflective of the impact of their emissions.

Without such adjustments, the gap between the intended and actual impact of carbon fees widens, undermining efforts towards global net-zero targets.



Considering sectoral differences

The decision on whether and how much a company should allocate funds externally hinges on its financial capability (gauged by profit per ton) and its potential to leverage those funds for emission reductions. The determinant here is the company's CO₂ intensity. For example:

- Service-oriented companies such as consultancies and those in the finance sector, typically have high profits per ton of CO₂ emitted (often exceeding \$10,000 per tonne), enabling them to adopt substantial internal carbon fees. However, their opportunities to use funds for reducing their own emissions are comparatively limited.
- A mining, or energy production, company on the other hand, might see profits below \$100 per tonne, as well as facing substantial investment requirements for transforming their operations, thus constraining their external climate project spending.

This paper proposes an internal carbon fee to fund external climate projects. The reason is that the budget for internal spending on reducing emissions will differ wildly between companies, some would need to spend more than their entire profits, taking on debt. An internal carbon fee could in principle be used for both internal and external spend, if so it should be higher than our recommendations in this paper, at least for high-emitting companies.



Different profits per tonne and carbon intensity

The chart depicts profit per tonne of CO₂ emitted vs CO₂ intensity for 174 of the world's largest companies on the Forbes 2,000 list.

A strong correlation can be seen; high emitters have low profits per ton and vice versa.

- Banking
- Chemicals
- Insurance
- Utilities
- Automotives
- Construction
- Transportation
- Oil & Gas Operations
- Food, Drink & Tobacco
- Diversified Financials
- IT Software & Services
- Health Care & Pharmaceuticals
- Consumer Goods & Retail
- Technology Hardware & Equipment
- Media & Telecommunications Services

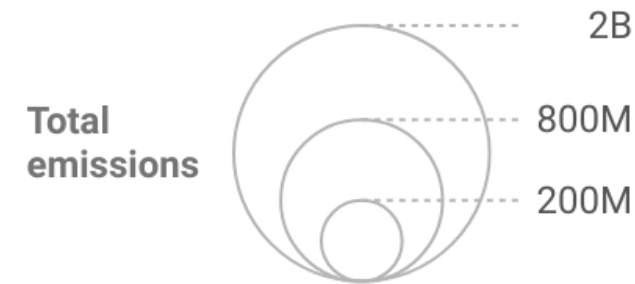
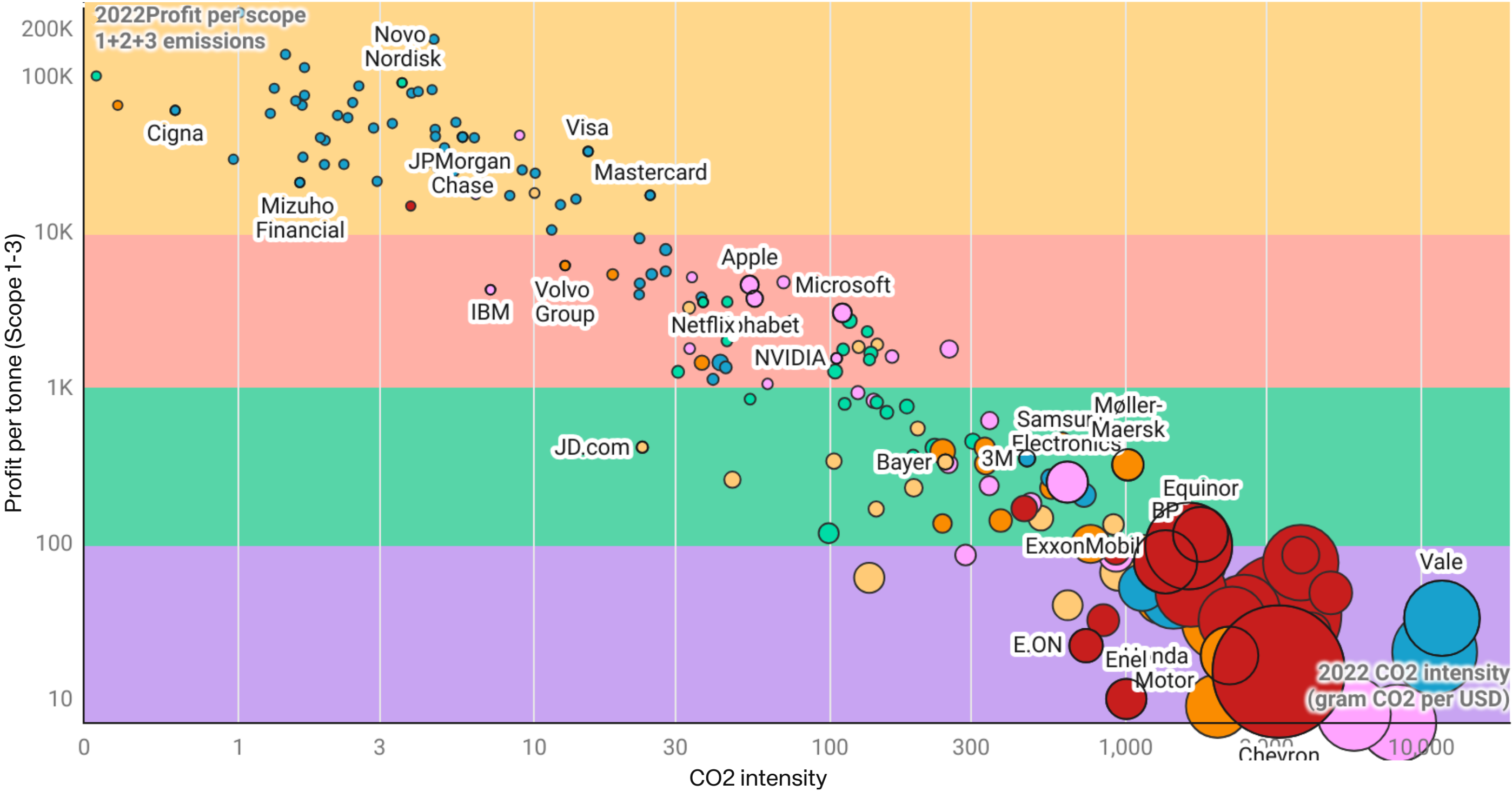


Chart: Data from Carbon Gap (2022)

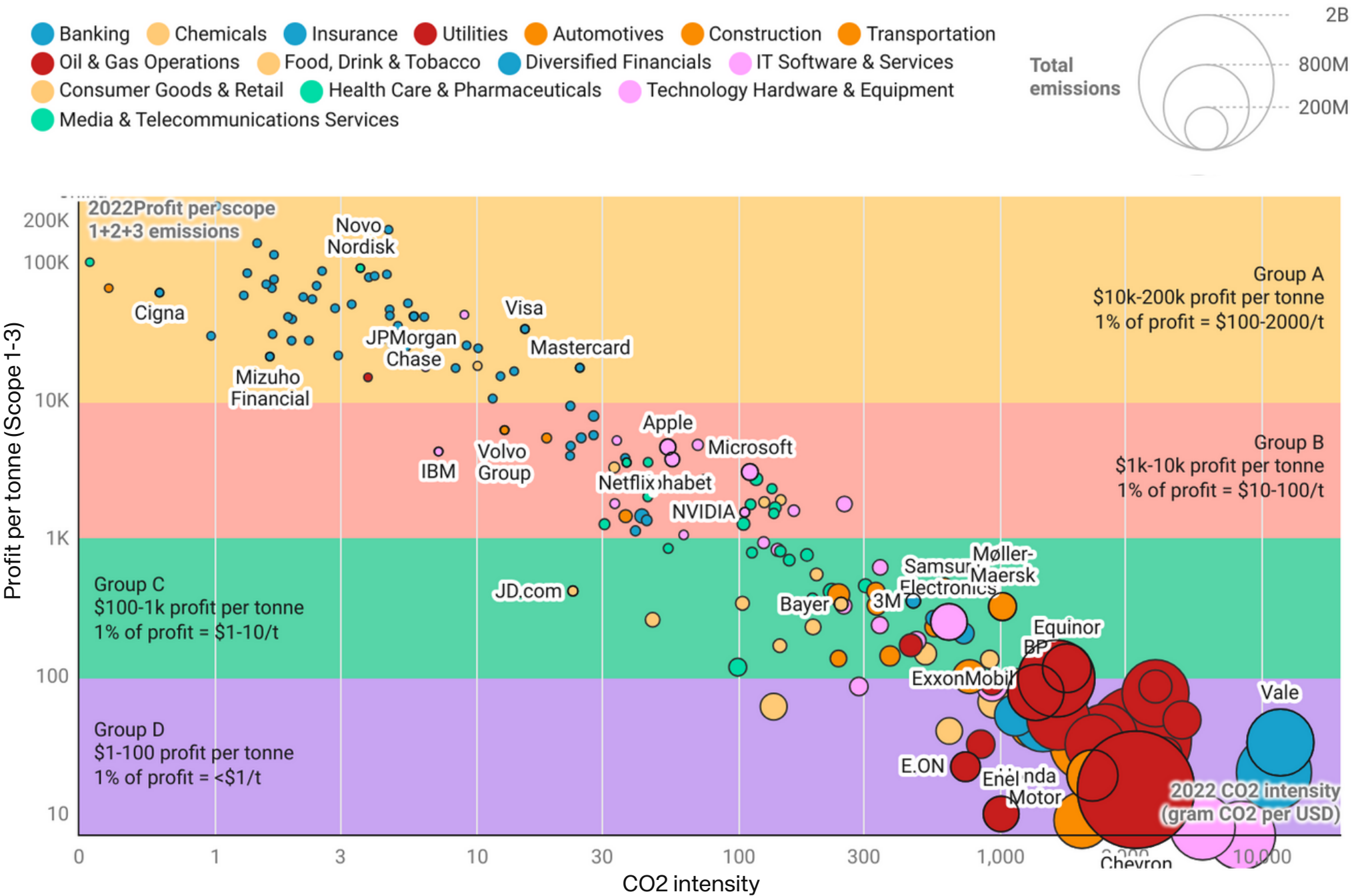


Dividing companies and industries into groups

We have divided companies into the four below groups based on their emission intensity and profit per tonne, and provide different recommendations for each group when setting an internal carbon fee, taking common industry characteristics into consideration.

GROUP A	Very low CO ₂ intensity (<10 gram/USD) or very high profits (>\$10k) per tonne. Typically in banking, insurance, finance, consulting, etc.
GROUP B	Low CO ₂ intensity (<100 gram/USD) or high profits (>\$1k) per tonne. Typically in media, software, pharma, high-value electronics, premium fashion, etc.
GROUP C	Average to high CO ₂ intensity (100-500 gram/USD) or medium profits (\$100-1,000) per tonne. Typically in retail, food & drinks, FMCG etc.
GROUP D	Very high CO ₂ intensity (>500 gram/USD) or low profits (<\$100) per tonne. Typically utilities, chemicals, oil & gas, mining, construction etc.

Chart: Profit and emission data from top companies in Forbes 2000 list (2022 data from Carbon Gap)



Recommendations

These are the version 1.1 of recommendations to companies in these groups. We are requesting comments and feedback on the recommendations for a version 2.0

Category:	GROUP A Very low CO ₂ intensity (<10 gram/USD) or very high profits (>\$10k) per tonne.	GROUP B Low CO ₂ intensity (<100 gram/USD) or high profits (>\$1k) per tonne.	GROUP C Average to high CO ₂ intensity (100-500 gram/USD) or medium profits (\$100-1,000) per tonne.	GROUP D Very high CO ₂ intensity (>500 gram/USD) or low profits (<\$100) per tonne.
Internal vs external spend:	Can afford both high external and internal spend on climate.	Can afford both external and internal spend on climate.	Likely need to spend majority of climate budget on internal transformation.	Likely need to spend close to whole budgets on internal transformation, (total budget might need to be >100% of profits)
Internal Carbon fee for external projects:	Choose an internal carbon fee of \$100-200/tonne in all three scopes.	Choose internal carbon fee. >\$100 /tonne for Scope 1&2 + travel, and \$5-99 for remaining Scope 3.	Choose a share of profit >1%	Choose a share of profit >1%
Comparison	A \$185/tonne fee in all scopes would represent an average* share of profit of 0.97% for this group.	A \$100/tonne fee for Scope 1-2 and \$10 for scope 3 would represent an average* share of profit of 1.4% for this group.	A 1% share of profit would on average* translate to \$5 per tonne in all scopes for this group.	A 1% share of profit would on average* translate to \$0.34 per tonne in all scopes for this group.

*Averages taken from Carbon Gap dataset of 137 top global companies (2020 data).



Examples of external budgets

Exemplifying the recommendations with archetypal companies in each category. Internal climate budgets for the Acme retail and Acme Oil would likely need to be many times higher.

Example:	<div>ACME CONSULTING</div> <div>\$20 million profit, \$21k profit per tonne</div>	<div>ACME ELECTRONICS</div> <div>\$100 million profit, \$1,300 profit per tonne</div>	<div>ACME RETAIL</div> <div>\$1 billion profit \$325 profit per tonne</div>	<div>ACME OIL</div> <div>\$2 billion profit, \$40 profit per tonne</div>
Emissions	<div>150 tonnes Scope 1-2 800 tonnes Scope 3</div>	<div>2,000 tonnes Scope 1-2+travel 75,000 Scope 3</div>	<div>75,000 Scope 1-2 3,000,000 Scope 3</div>	<div>10 million Scope 1-2 40 million Scope 3</div>
Internal Carbon fee for external projects:	<div>\$185 across all scopes (would represent 0.88% of profit)</div>	<div>\$100/tonne for Scope 1&2 + travel. \$10/tonne for rest of Scope 3. (would represent 0.95% of profit)</div>	<div>1% of profit (would represent a \$3,25 carbon fee)</div>	<div>1.5% of profit (would represent a \$0.60 carbon fee)</div>
Sum generated	<div>\$175,500</div>	<div>\$950,000</div>	<div>\$10 MILLION</div>	<div>\$30 MILLION</div>



Examples of internal carbon fees

Klarna

Global payment provider, Klarna has set a \$100 fee on their scope 1, 2, and travel emissions and \$10 for the rest of scope 3. Klarna uses that money to support climate solutions selected for the [Milkywire Climate Transformation fund](#). In 2021-2024 the fee generated over \$5 million, used to contribute to projects in the fund.

Microsoft

Microsoft was one of the early companies to set a real internal carbon fee. Currently, the fee is \$15 per ton for Scope 1 and 2, \$100 for business travel, and \$8 for the remainder of Scope 3. The money is used both for internal emission reductions and for supporting external projects such as carbon removal.

Swiss Re

Reinsurance company, Swiss Re implemented a \$100 fee (called internal carbon levy) per ton in Scope 1-3. It will gradually increase to \$200 per ton in 2030 and was \$112 dollar in 2022. Swiss Re uses the funds to purchase carbon credits, including high-quality carbon removal, such as with the \$10 million, 10-year agreement they signed with Climeworks.



DIRECT CO₂ AIR CAPTURE TECHNOLOGY,
ORCA PLANT, ICELAND
PHOTO BY CLIMEWORKS WHICH HAVE
BEEN SUPPORTED BY KLARNA,
MICROSOFT AND SWISS RE



Other examples of carbon fees set by contributors to Milkywire's Climate Transformation Fund

BioGaia®

SCOPES 1 & 2

\$100

BUSINESS TRAVEL

\$100

SCOPE 3 (REMAINING)

\$10

 **Mentimeter**

SCOPES 1 & 2

\$100

SCOPE 3

\$100

NORTHZONE

SCOPES 1 & 2

\$100

BUSINESS TRAVEL

\$100

SCOPE 3 (REMAINING)

\$10*

atomico°

SCOPES 1 & 2

\$100

BUSINESS TRAVEL

\$100

SCOPE 3 (REMAINING)

\$10*

*Including financed emissions (3.15), scopes 1 & 2



Transitioning into a carbon fee

Given the diversity in resources, operational frameworks, and other constraints, it is recognized that not every company is in a position to immediately implement a credible internal carbon fee.

A transition plan towards an internal carbon fee from purchasing carbon credits provides companies a strategic path towards credible climate action. In practice, a company can start by setting a lower fee, with a clear target of gradually increasing it to a credible fee level (\$100+ per ton of CO₂) over a 2-3 year term.

This phased approach allows for budget adjustments and operational alignments, ensuring the transition is financially and practically manageable. By committing to a clear timeline, companies can demonstrate their dedication to credible environmental contributions, aligning with best practices and leading frameworks in corporate climate accountability. This method ensures a balanced shift towards meaningful sustainability goals.

PRACTICAL STEPS TO GET STARTED

- Set a target fee: Review available guidance (pp. 10-13, 17-18) to set a suitable target fee.
- Baseline assessment: Calculate the difference between current budget constraints and a the target fee budget to understand the magnitude of the shift.
- Set incremental goals: Establish time line and increases to reach the target fee.
- Financial planning: Adjust budgets to accommodate the increasing internal carbon fee.



MANGROVE FOREST CLEARING
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INITIATIVE



Alternative methods to set a carbon budget

While this paper primarily argues for the use of an internal carbon fee (or, “money-for-ton”), it is worth noting two alternative methods presented by the [SBTi](#) for when setting a carbon budget.

Money-for-Money

An approach whereby companies earmark a percentage of revenue or profit to support beyond value chain mitigation. While still promoting support for broad mitigation efforts, including emerging CDR technologies, the lack of a direct connection between tonnes emitted by a company and the contribution amount lowers the incentive to reduce internal carbon emissions. Thus, the approach is more arbitrary than an internal carbon fee, as the connection to the social cost of carbon is lost. Nevertheless, this is our recommended option for big emitters that need to focus on reducing internal emissions and struggle to set a credible carbon fee for external projects.

Ton-for-Ton

An approach that links beyond value chain mitigation to a specific percentage of a company’s emissions, aiming for annual mitigation equivalent to 100% of scopes 1, 2, and 3. This is the traditional way of determining responsibility, but comes with the risk of prioritizing cost per tonne over mitigation quality, leading to a race to the bottom. It also makes it difficult to support expensive solutions, like durable carbon removal, and high impact solutions that are harder to quantify, like advocacy, R&D, and solutions with indirect effects.



Wider guidance

Gold Standard/Milkywire Beyond value chain mitigation (BVCM) guidance

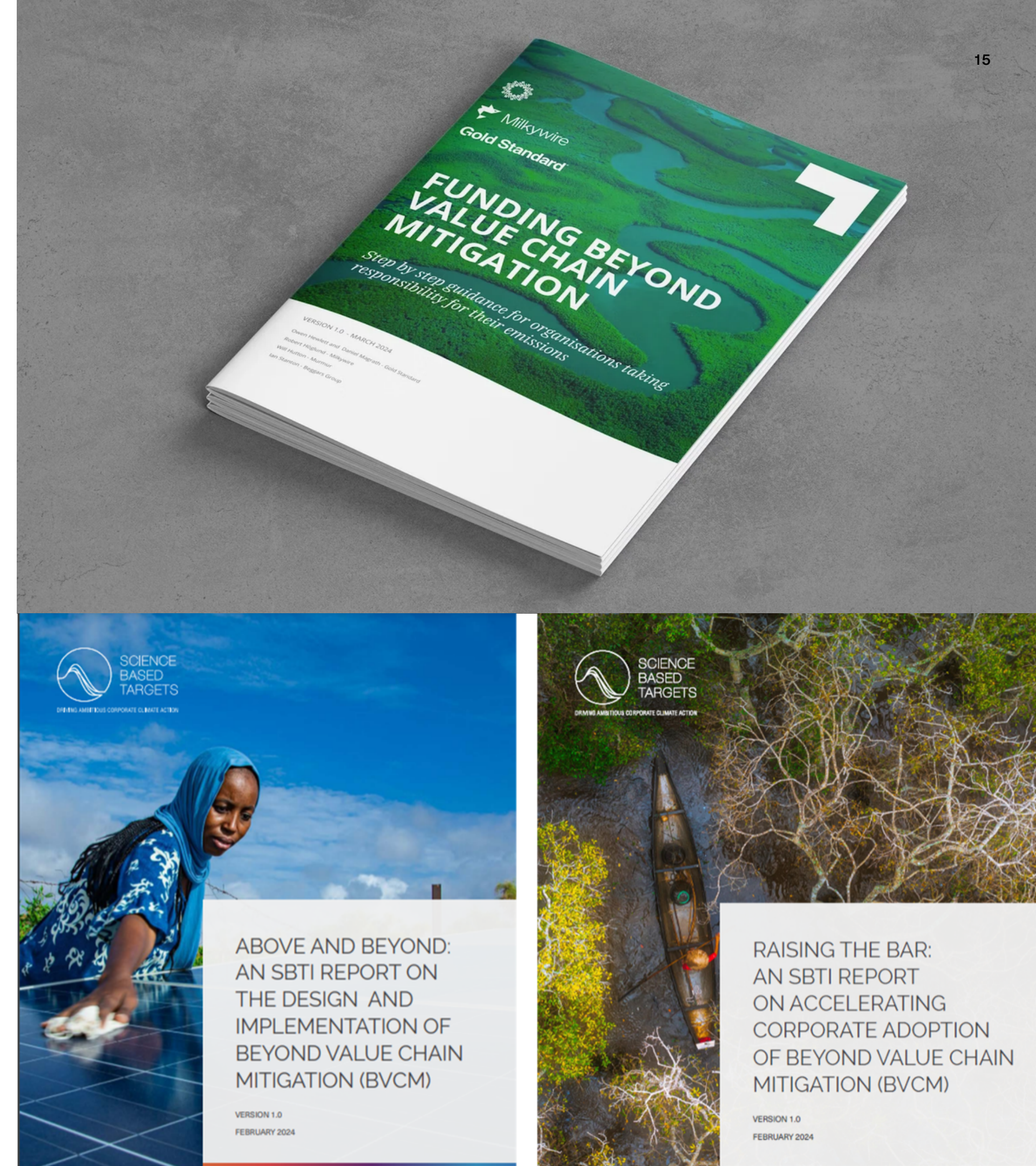
A new guidance released in March 2024 developed by Milkywire, Gold Standard and Murmur, goes into detail about how to take fund climate action. The guide provides a clear, stepwise approach, supplemented by summaries of to-do lists, key choices and expected outputs of each stage. [Link](#)

SBTi BVCM guidance

The SBTi guidance, divided into two publications, sets two primary goals for BVCM: to catalyze immediate mitigation outcomes and promote the scale-up of emerging climate solutions. It introduces four guiding principles: scale enhancement, focus on underfinanced opportunities, support for sustainable development goals (SDGs), and climate justice advancement. Milkywire was invited to write a foreword and our climate expert Robert serves in the SBTi technical advisory group that has fed into the guide.

WWF/BCG Corporate climate action blueprint

The WWF and BCG teamed up in 2020 and published their influential [blueprint for corporate climate action](#), setting up the approach where companies work to reduce their emissions and implement a carbon fee, using the money to support climate projects.



Want to learn more about
how your organization can
implement a carbon fee?

GET IN TOUCH



**This guidance is a work in progress and will be continuously updated.
Input and comments are welcome.**

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