

Version 2.0

# Corporate climate responsibility

Guidance and assessment criteria for good practice  
corporate emission reduction and net-zero targets

July 2022

# Corporate climate responsibility

## Guidance and assessment criteria for good practice corporate emission reduction and net-zero targets (Version 2.0)

July 2022

### Authors

Thomas Day  
Silke Mooldijk  
Frederic Hans  
Sybrig Smit  
Mats Marquardt  
Aki Kachi  
Eduardo Posada  
Harry Fearnough  
Carsten Warnecke  
Takeshi Kuramochi  
Niklas Höhne

Download the publication:



[https://newclimate.org/sites/default/files/2022-07/NewClimate\\_Evaluating\\_corporate\\_target\\_setting\\_in\\_the\\_Netherlands\\_Report\\_July22.pdf](https://newclimate.org/sites/default/files/2022-07/NewClimate_Evaluating_corporate_target_setting_in_the_Netherlands_Report_July22.pdf)

### Disclaimer

The guiding principles identified in this document relate to issues where the state of scientific knowledge and debate is rapidly evolving. The contents of this document represent the views of the authors, based on our interpretation of existing research and current developments. Our assessments of specific companies are based upon these perspectives and interpretations, which may not be universally held views.

### Project number

321041

© NewClimate Institute 2022

# Table of Content

About this guidance and assessment criteria	6
Good practice overview	8
<b>1 Tracking and disclosure of emissions</b>	<b>10</b>
1.1 Comprehensive disclosure of emissions	11
<b>2 Setting emission reduction targets</b>	<b>18</b>
2.1 Coverage of emission sources	19
2.2 Emission reductions in the headline pledge	22
2.3 Substantiation through interim targets	24
<b>3 Reducing own emissions</b>	<b>26</b>
3.1 Emission reduction measures	27
3.2 Procurement of renewable electricity	31
<b>4 Climate contributions and offsetting</b>	<b>36</b>
4.1 Responsibility for unabated emissions	37
4.2 Climate contributions without a neutralisation claim	38
4.3 Offsetting claims	40
Glossary and abbreviations	50
Data sources	53
References	54

## List of tables

Table 1: Overview of best practice corporate climate responsibility and rating methodology	9
Table 1 A: Categories of scope 3 emission sources	12
Table 1 B: Overview of financial services and their climate relevance	15
Table 1 C: Assessment criteria for tracking and disclosure of emissions (real-economy companies and financial institutions)	17
Table 1 D: Additional assessment criteria for tracking and disclosure of emissions (financial institutions)	17
Table 2 A: Assessment criteria for coverage of emission sources in targets (real-economy companies and financial institutions)	21
Table 2 B: Assessment criteria for coverage of financed emissions (scope 3, category 15) in targets (financial institutions)	21
Table 2 C: Assessment criteria for the specificity of emission reduction targets in headline pledges (real-economy companies and financial institutions)	23
Table 2 D: Assessment criteria for substantiating long-term pledges through interim targets (real-economy companies and financial institutions)	25
Table 3 A: Engagement and exclusion/divestment focus areas, based on Laplane and van Loenen (2021)	28
Table 3 B: Assessment criteria for real-economy companies' emission reduction measures	29
Table 3 C: Assessment criteria for financial institutions' emission reduction measures	30
Table 3 D: Overview of renewable electricity procurement options	34
Table 3 E: Assessment criteria for procurement of renewable electricity (real-economy companies and financial institutions)	35
Table 4 A: Assessment criteria for good practice climate contributions (real-economy companies and financial institutions)	37
Table 4 B: Assessment criteria for good practice climate contributions (real-economy companies and financial institutions)	49
Table 4 C: Overview of the factors affecting suitability of CDR technologies for neutralising GHG emissions	46
Table 4 D: Assessment criteria for neutralisation claims in the present (real-economy companies and financial institutions)	48
Table 4 E: Assessment criteria for neutralisation claims planned for the future (real-economy companies and financial institutions)	49



# About this guidance and assessment criteria

## The need for scrutiny on corporate climate action

**Many companies are putting themselves at the forefront of climate action.** The rate of corporate climate pledge setting is accelerating exponentially: by January 2022, over 3,000 companies had joined the UNFCCC's Race to Zero campaign (UNFCCC, 2022), more than doubling the number of companies setting net-zero emission pledges from the year before (NewClimate Institute and Data-Driven EnviroLab, 2020).

Civil society's increasing concern with the urgency of the climate crisis is resulting in more pressure from consumers, shareholders and regulators for companies to decarbonise. In parallel, companies realise that the direction of travel is set for the decarbonisation of the global economy, and it is increasingly attractive for them to assume a leading role in that new paradigm. Many companies are scrambling for new approaches and narratives to demonstrate their climate leadership, recognising that historical approaches face limitations in today's context.

The rapid acceleration of corporate climate pledge setting, combined with the fragmentation of approaches and the general lack of regulation or oversight, means that it is more difficult than ever to distinguish between real climate leadership and unsubstantiated greenwashing.

**The goalpost of what constitutes good practice climate action for companies has shifted with the adoption of the Paris Agreement and the increasingly clear scientific evidence that underpins its urgency.** With the objectives of the Paris Agreement, greenhouse gas emissions need to be reduced at speed, in all countries and in all sectors. The 1.5°C limit requires a reduction in global CO<sub>2</sub> emissions of approximately 45% from 2010 levels by 2030, to reach a state of net-zero

global CO<sub>2</sub> emissions by around 2050, net-zero of emissions of all greenhouse gases by around 2060 to 2070, and net-negative emissions thereafter (IPCC, 2018b). Company actions that were considered viable in the era of the Kyoto Protocol only 10 years ago are no longer sufficient.

For example, it is no longer sufficient for companies to only address their own direct emissions; rather, companies now need to address upstream and downstream emissions as well. It is no longer good practice for a company to compensate for emissions by reducing or removing emissions elsewhere; rather, emission reductions and removals "elsewhere" need to be enhanced in parallel to the company's emission reductions, to reach global net zero.

A new mindset and evaluation standard for companies is necessary. While in the Kyoto era only some countries were required to act, companies now need to ask themselves: "Would we reach global net zero emissions if all would do what we are doing?"

**The difficulty of distinguishing real climate leadership from greenwashing is a key challenge that, where addressed, has the potential to unlock greater global climate change mitigation ambition.** Corporate climate action is key to closing the emissions gap to a 1.5°C pathway. In a short space of time, and in the absence of sufficient top-down regulation, consumer's and shareholder's expectations have become a major driver for enhanced corporate climate action. Companies appear to be responding. To facilitate this important bottom-up pressure mechanism, it is essential that the credibility of companies' strategies is transparent and can be understood by their target audiences.

## Evaluating corporate target setting in the Netherlands

Building on the first version of the guidance and assessment criteria for the *2022 Corporate Climate Responsibility Monitor*, this second version of the guidance and assessment criteria was updated for an evaluation of the transparency and integrity of Dutch companies' climate pledges: *Evaluating corporate target setting in the Netherlands (July 2022)*. The objectives of the analysis are:

- **Identify and highlight good practice approaches** that can be replicated by other companies, recognising that companies are experimenting to work out what is constructive and credible practice.
- **Reveal the extent to which major companies' climate leadership claims** have integrity, and provide a structured methodology for others to replicate such an evaluation.
- **Scrutinise the credibility of companies' plans for offsetting their emissions** through carbon dioxide removals or emission reduction credits, recognising that voluntary carbon markets are highly fragmented and there remains a lot of uncertainty on credible good practice.

The guidance and assessment criteria focuses on four main areas of corporate climate action: tracking and disclosure of emissions (section 1), setting emission reduction targets (section 2), reducing own emissions (section 3) and taking responsibility for unabated emissions through climate contributions or offsetting (section 4).

The development of the assessment criteria is guided by the principles for good practice corporate climate responsibility set out in this document. We have drawn these guiding principles from a combination of scientific literature review, previous work of the authors, and the identification of existing good practices from company case studies. The guiding principles identified in this document relate to issues where the state of scientific knowledge and debate is rapidly evolving. The contents of this document represent the views of the authors, based on our interpretation of existing research and current developments. Our

assessments of specific companies are based upon these perspectives and interpretations, which may not be universally held views.

See the evaluation of 29 major Dutch companies and financial institutions in *Evaluating corporate target setting in the Netherlands (July 2022)*



[https://newclimate.org/sites/default/files/2022-07/NewClimate\\_Evaluating\\_corporate\\_target\\_setting\\_in\\_the\\_Netherlands\\_Report\\_July22.pdf](https://newclimate.org/sites/default/files/2022-07/NewClimate_Evaluating_corporate_target_setting_in_the_Netherlands_Report_July22.pdf)

# Good practice overview

Corporates looking to take a position of climate leadership can learn from each other to replicate good practice approaches that are transparent, constructive and robust. We assess companies to draw out good practice in four key areas:

## 1 Tracking and disclosure of emissions (section 1)

To develop a comprehensive and robust climate strategy, it is key that companies understand and are transparent about their GHG emission footprints and their trajectories. Section 1 presents good practice principles and trends for tracking and disclosure of emissions.

## 2 Setting specific and substantiated targets (section 2)

Companies' headline climate change pledges encompass a broad range of target setting approaches. Regardless of the type of target and the terminology used, the commitments should send a clear signal for immediate action to decarbonise the value chain, and should avoid misleading consumers, shareholders, observers and regulators. Section 2 presents good practice principles and trends for setting specific and substantiated targets, considering the coverage of emission sources, the explicit specification of an emission reduction target as part of the headline pledge, and the substantiation of long-term visions through interim targets.

## 3 Reducing own emissions (section 3)

Encompassing measures for deep emission reductions are the backbone of ambitious corporate climate targets. Section 3 presents good practice principles and trends for reducing own emissions, including a special focus on good practice for sourcing renewable electricity. This section also elaborates on good practice principles for financial institutions, including the assessment of comprehensive strategies for exclusion, engagement, and divestment.

## 4 Responsibility for unabated emissions (section 4)

Corporate climate leadership includes not only ambitious target setting, but also taking responsibility for unabated emissions. Section 4 explores good practice and trends related to two distinct approaches for assuming responsibility for unabated emissions: climate contributions and offsetting claims.

The specific assessments include a rating of the **transparency** and **integrity** of companies' approaches:

- **Transparency** refers to the extent to which a company publicly discloses the information necessary to fully understand the integrity of that company's approaches towards the various elements of corporate climate responsibility.
- **Integrity**, in this context, is a measure of the quality, credibility and comprehensiveness of those approaches.

Table 1 provides an overview of good practice corporate climate responsibility and the rating methodology for transparency and integrity in each of these five areas.

**Table 1: Overview of best practice corporate climate responsibility and rating methodology**

<h2>1 Tracking and disclosure of emissions</h2>	<h3>Companies exhibiting best practice...</h3>
<p><b>Comprehensiveness of disclosure</b></p>	<ul style="list-style-type: none"> <li>✓ Disclose full details on their GHG emissions on an annual basis, with a breakdown of the data to specific emission sources (including scope 1, 2, 3 and non-GHG climate forcers) and the presentation of historical data for each of the emission sources.</li> <li>✓ In addition, financial institutions provide a full disclosure of financed emissions across all financial services.</li> </ul>
<h2>2 Setting specific &amp; credible targets</h2>	<h3>Companies exhibiting best practice...</h3>
<p><b>Coverage of emission sources in target</b></p>	<ul style="list-style-type: none"> <li>✓ Explicitly state that their targets cover all scope 1, 2 and 3 emissions, and also non-GHG climate forcers where relevant.</li> <li>✓ In addition, financial institutions set scope 3 targets that cover 100% of their financed emissions across all financial services.</li> </ul>
<p><b>Emission reductions in the headline pledge</b></p>	<ul style="list-style-type: none"> <li>✓ Set a specific emission reduction target that is independent from offsetting claims, and aligned with 1.5°C compatible trajectories or benchmarks for the sector, as their main headline pledge.</li> </ul>
<p><b>Substantiation through interim targets</b></p>	<ul style="list-style-type: none"> <li>✓ Set interim targets that are aligned with the long-term vision in terms of depth and scope, with the first target on a timescale that requires immediate action and accountability (maximum 5 years).</li> </ul>
<h2>3 Reducing emissions</h2>	<h3>Companies exhibiting best practice...</h3>
<p><b>Emission reduction measures</b></p>	<ul style="list-style-type: none"> <li>✓ Real-economy companies implement encompassing and deep decarbonisation measures, and disclose details of those measures to support replication and the identification of new solutions.</li> <li>✓ Financial institutions apply targeted exclusion and engagement strategies across all financial services.</li> </ul>
<p><b>Renewable electricity generation and procurement</b></p>	<ul style="list-style-type: none"> <li>✓ Procure the highest quality renewable energy available, and disclose the full details of that procurement.</li> </ul>
<h2>4 Climate contributions and offsetting</h2>	<h3>Companies exhibiting best practice...</h3>
<p><b>Climate contributions</b></p>	<ul style="list-style-type: none"> <li>✓ Provide an ambitious volume of support to climate change mitigation activities beyond the value chain, without claiming neutralisation of the company's own emissions.</li> </ul>
<p><b>Offsetting claims today</b></p>	<ul style="list-style-type: none"> <li>✓ Avoid misleading claims, and procure only high quality credits that lead to an additional climate impact.</li> </ul>
<p><b>Offsetting plans for the future</b></p>	<ul style="list-style-type: none"> <li>✓ Avoid misleading pledges, and commit to procuring only high quality credits from high hanging fruit projects<sup>1</sup>, and to pursue corresponding adjustments to avoid double counting risks.</li> </ul>

Note: Best practices were derived from the principles elaborated in the following subsections, and from a compilation of the practices identified from existing company pledges in 2021 and 2022.

<sup>1</sup> High-hanging fruits refer to the most ambitious projects that tackle the least accessible areas of mitigation potential. For more information see section 4.2.1.

# Tracking and disclosure of emissions

To develop a comprehensive and robust climate strategy, it is key that companies understand and are transparent about their GHG emission footprints and their trajectories. A complete and transparent overview of a company's emissions footprint is crucial to understand a company's scope of influence, to grasp relevance of its climate-related targets, and to determine whether emission reduction measures are appropriate and comprehensive.

This section assesses the comprehensiveness of companies' GHG emission tracking and disclosure for specific emission scopes, and for subsidiary companies. This report does not assess the rigorousness and accuracy of companies' calculations when quantifying emissions from each emission scopes; quantified GHG emissions throughout this document are self-reported by the companies and not verified by the authors. Rather, we assess how comprehensive the companies' own disclosure is in terms of the coverage of emission sources.

# 1.1 Comprehensive disclosure of emissions

## 1.1.1 Guiding principles

**Companies should annually disclose detailed information on their GHG emissions, covering the full spectrum of climate impacts associated with the activities of the company.** Meaningful planning for complete decarbonisation depends on a thorough and granular understanding of a company's emission sources. Complete and transparent disclosure covers all direct emissions (scope 1), indirect energy-use emissions (scope 2) and other upstream and downstream indirect emissions (scope 3). The latter includes business travel emissions, emissions from procured products and services, investments, waste, upstream and downstream transport and distribution and emissions from product use. Where relevant, companies should also include non-GHG climate forcers in their disclosure. Companies should publish information on the methodologies and assumptions involved in the calculation of emissions, to facilitate comprehension and verification. This is particularly important for emission sources where there remains significant uncertainty and inconsistency in accounting approaches, such as emissions from land-use change and forestry.

**Companies can ensure full transparency by reporting on even minor and irrelevant scope 3 emission sources.** The GHG Protocol's Scope 3 Standard identifies 15 distinct reporting categories for scope 3 emission sources, and requires companies to quantify and report scope 3 emissions from each category (WRI and WBCSD, 2013). It is important for transparency that companies to disclose data or at least explanatory information for all 15 of these normal scope 3 emission categories (see Table 1 A), even those deemed minor or irrelevant. Differences in interpretations regarding what constitutes a "minor" or "relevant" emission

source could lead to significant inconsistencies between companies' reporting. Some observers may perceive the omission of minor emission sources to be a significant gap in disclosure, unless these omissions are explained.

Table 1 A: Categories of scope 3 emission sources

Upstream scope 3 emission categories	1	<b>Purchased goods and services</b>	Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2 - 8.
	2	<b>Capital goods</b>	Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year.
	3	<b>Fuel- and energy-related activities (not included in scope 1 or scope 2)</b>	Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in scope 1 or scope 2.
	4	<b>Upstream transportation and distribution</b>	Transportation and distribution of products purchased by the company between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company); and transportation and distribution services purchased by the company including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company).
	5	<b>Waste generated in operations</b>	Disposal and treatment of waste generated in the company's operations (in facilities not owned or controlled by the reporting company).
	6	<b>Business travel</b>	Transportation of employees for business-related activities (in vehicles not owned or operated by the reporting company).
	7	<b>Employee commuting</b>	Transportation of employees between their homes and their worksites (in vehicles not owned or operated by the reporting company).
	8	<b>Upstream leased assets</b>	Operation of assets leased by company (lessee) and not included in scope 1 and scope 2 – reported by lessee.
Downstream scope 3 emission categories	9	<b>Downstream transport and distribution</b>	Transportation and distribution of products sold by the company between the company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).
	10	<b>Processing of sold products</b>	Processing of intermediate products sold by downstream companies (e.g., manufacturers).
	11	<b>Use of sold products</b>	End use of goods and services sold by the company.
	12	<b>End-of-life treatment of sold</b>	Waste disposal and treatment of products sold by the company (in the reporting year) at the end of their life.
	13	<b>Downstream leased assets</b>	Operation of assets owned by the company (lessor) and leased to other entities, not included in scope 1 and scope 2 – reported by lessor.
	14	<b>Franchises</b>	Operation of franchises, not included in scope 1 and scope 2 – reported by franchisor.
	15	<b>Investments</b>	Operation of investments (including equity and debt investments and project finance), not included in scope 1 or scope 2.

Source: GHG Protocol Corporate Value Chain Standard (WRI and WBCSD, 2011)

**Reporting on scope 3 emissions outside of these normal categories is in some cases crucial for transparency, while in other cases it may not be constructive.** Comprehensive coverage of emissions disclosure does not necessarily mean reporting any emissions that a tenuous link can be found, if they are outside of the normal reporting scope. Indirect use-phase emissions as well as direct use-phase emissions from products that are not sold to an end-user are described by the GHG Protocol Scope 3 Standard as optional reporting components. The vagueness of this specific guidance represents a significant limitation, since the way in which companies report on these emissions and include them in their targets can significantly strengthen or undermine their targets, depending on the specific sector and the context:

- **Direct use-phase emissions** for products that are not sold to an end-user form a highly significant part of the climate impact associated with the business model of many companies in the energy supply sector, for example. Fossil fuel commodity traders and companies providing distribution infrastructure provide a key service to the fossil fuel supply chain. For many of these companies, the combustion of those fossil fuels constitutes the most significant issue for the companies' climate impact, and the unabated continuation of those business models may be fundamentally misaligned with the objectives of the Paris Agreement. However, those companies may not be required by the GHG Protocol guidance to report on the downstream emissions associated with their fuel sales unless their sales are directly to end-users, leading to the situation that those companies' climate impact is misunderstood. For these companies, focusing on emission reduction measures that fall only in their currently mandatory emissions reporting scope can lead to the situation that investments are made to "green" the fossil fuel production and supply chain industries, creating further financial lock-in to the continuation of that industry, whilst the most important measure for the Paris alignment of the

sector would rather be to work towards the phase out of the use of fossil fuels.

- The guidance for direct use-phase emissions for sales that are not sold to an end-user can also create an accounting loophole for electricity retailers. Electricity retailers that purchase lower-cost wholesale electricity containing a mixture of renewable and non-renewable sources could claim to have no downstream emissions, if they claim to have passed the renewable portion of that electricity onto customers while reselling the remainder of the electricity to other sales partners. This could create limited incentives for electricity retailers to pursue high quality renewable electricity procurement constructs. The significance of this issue may increase with the trend that major electricity utilities are transitioning their business models from electricity generation to electricity retail in order to shift their emission footprint from scope 1 to the less strictly regulated scope 3.
- In contrast to direct use-phase emissions from products, such as the energy consumption of vehicles and appliances, **indirect use-phase emissions** refer to the emissions that occur indirectly from the use of a product. For example, apparel requires washing and drying, soaps and detergents are often used with heated water. While there are circumstances where it could be constructive to report on these emissions and include them in targets, special care should be taken in determining when it is appropriate to do so: if these emissions constitute a major portion of a product's footprint and the company has no control or influence on potential emission reductions, then reporting on these emissions can also lead to distraction from the company's mandatory emission scope, or targets can be disingenuous.

**Companies should report scope 2 emissions using both the location-based and market-based method, taking the highest of the two values for their calculation of their total emission:** According to the GHG Protocol (GHG

Protocol, 2015) companies should report on scope 2 emissions using both the location-based and market-based accounting methods.

- The location-based method reflects the average emissions intensity of grids on which energy consumption occurs.
- The market-based method reflects emissions from electricity that companies have purposefully chosen. It derives emission factors from contractual renewable electricity procurement instruments.

Both accounting approaches have the potential to mislead in different circumstances. Companies have a variety of options for sourcing renewable electricity (see section 3). While for some an emissions reduction claim may be legitimate, for others the impact is unclear. As the impact of renewable electricity projects varies and is often unclear, market-based reporting for renewable energy constructs may give the false impression that a company has no or few scope 2 emissions, and could divert prioritisation away from energy efficiency improvements.

On the other hand, some companies' market-based emissions may be higher than their location-based emissions, due to contractual arrangements for the direct procurement of fossil-fuel powered electricity. In this case, companies could report location-based emissions based on the local grid emission factor, while profiting from cheaper electricity procurement constructs from a more emissions-intensive source.

In order to create a clear incentive to both maximise energy efficiency improvements and to procure renewable electricity, it would be most constructive for companies to report on both market-based and location-based scope 2 emissions, and to use the larger of the two values towards the company's aggregated total emissions.

**Companies' disclosure should include contextual information to understand key emission drivers and trends.** Complete and transparent disclosure includes historical data, a breakdown of emission sources, activity data

and emission intensities. Ambitious companies go beyond the publication of aggregated emissions; they provide a high level of detail to allow for thorough understanding of the specific individual emission sources. Transparency on specific emission sources and activity data is a tool for increasing ambition in its own right: it contributes to a constructive, collaborative dialogue that is required to overcome challenges and share lessons learnt for accelerated decarbonisation.

**Companies' disclosure should include the emissions associated with subsidiary companies.** Companies may depend on emission-intensive assets and infrastructure that are held in other subsidiary companies. Transparent and complete reporting also includes these emissions, which should be integrated into the company's scope 1, 2 and 3 emissions. The exclusion of these emissions from GHG inventories can lead to inaccurate interpretations regarding specific brands' or products' GHG emission footprints. If companies report transparently on the emissions of all subsidiaries, this can incentivise those companies to make a real shift away from emissions-intensive activities and assets, rather than continuing those emissions-intensive activities through subsidiaries.

### **Additional guiding principles for financial institutions**

**Financial institutions should track and report on emissions from investments (downstream scope 3, category 15), as those comprise the largest share of financial institutions' GHG footprint.** Financial institutions may want to follow the guidelines developed by the GHG Protocol and the Partnership for Carbon Accounting Financials (PCAF), respectively, or comparable frameworks (for the purpose of this methodology, PCAF is used to define a minimum standard). At least, financial institutions should provide annual disclosure of GHG emissions across all financial services separately at a fixed and representative points in time (including historic data for comparison). Table 1B provides an overview of the most relevant financial services.

**Table 1 B: Overview of financial services and their climate relevance**

Financial service	Description	Climate materiality or relevance
<b>Direct investment (listed and non-listed equity)</b>	Direct investment in publicly listed or non-listed equity, part of the investor's proprietary asset portfolio.	Potentially high financed emissions, depending on sector.
<b>Indirect investment (e.g. mutual or exchange traded funds (ETFs))</b>	Indirect investments through passive or managed funds, part of the investor's proprietary asset portfolio.	Potentially high financed emissions, depending on sector or index.
<b>Corporate bonds</b>	Debt security issued by companies providing fixed income to the investor, part of the investor's proprietary asset portfolio.	Potentially high financed emissions, depending on sector.
<b>Sovereign bonds</b>	Debt security issued by governments providing fixed income to the investor, part of the investor's proprietary asset portfolio.	Potentially high financed emissions, depending on issuing country.
<b>Corporate loans</b>	Loans for earmarked purposes (project finance) or working capital providing a fixed income to the lender, part of the lender's proprietary asset portfolio.	Potentially high financed emissions, depending on sector.
<b>Consumer loans (e.g. real estate, vehicles)</b>	Loans to consumers for personal expenditures.	Comparably low financed emissions for general purpose loans. High financed emissions for vehicle loans and real estate with low energy inefficiency.
<b>Corporate insurance (e.g. project underwriting)</b>	Insurance underwriting for companies on all forms of operational risks, specifically with respect to project risks.	Potentially high insured emissions, depending on client or insured project. Potentially high financed emissions from general account and separate
<b>Consumer insurance (e.g. life/health insurance)</b>	General consumer insurance such as life/health insurance.	Potentially low insured emissions, specifically with life/health insurance. Potentially high financed emissions from general account and separate account assets.
<b>Brokerage</b>	Investment brokerage services resulting in non-discretionary managed accounts (the provider has no control over investments).	Potentially high financed emissions from non-proprietary investments of clients, account assets.

When reporting their financed emissions, financial institutions must report investee companies' absolute emissions disaggregated by scope. Financial institutions must separate their reporting of investee companies' scope 1 and 2 from scope 3 emissions (to avoid double counting issues). PCAF reporting requirements differ by financial service type. For listed equity, corporate bonds, business loans, unlisted equity, as well as project finance, financed emission reporting must at least capture scope 1 and 2 emissions of investee companies or borrowers. Scope 3 emissions of investee companies should be separately provided where possible. For financial services to the following economic activities, however, PCAF suggests that separate reporting of scope 3 emissions becomes a necessary requirement from certain years onward:

- From 2021: at least energy (oil and gas) and mining;
- From 2024: at least transportation, construction buildings, materials and industrial activities;
- From 2026: every sector.

For project finance, scope 1 and 2 emissions from projects must be reported. Scope 3 emissions, as well as removed and avoided emissions should be reported separately, where relevant. For commercial real estate and mortgages, scope 1 and 2 emissions related to energy use should be reported. For motor vehicle loans, scope 1 and 2 should be reported.

PCAF has started to develop a methodology to measure and track insured emissions, i.e. emissions associated with insurance companies' underwritings. In the absence of other methodologies, we apply the same emissions measurement and tracking scopes to insurance companies' corporate underwriting portfolio as for financial institutions' business loans. We generally rate the climate materiality of consumer insurance products less relevant and do not evaluate insurance companies on tracking and disclosing these. However, we evaluate both companies providing corporate and consumer-oriented insurance policy underwriting on their tracking and disclosure of financed emissions from assets held on their general and separate accounts.

We acknowledge that data availability is a major challenge, and, in most cases financial institutions are not yet able to track and disclose their scope 3 emissions across all their financial services and in required detail. **For full transparency, financial institutions should provide estimates of financed emissions for which data is not available.** Financial institutions should report on and justify any sources of emissions not covered by their tracking and disclosure. In all cases, financial institutions' reporting must define carbon-intensive activities and disclose and track the most relevant sources of emissions.

### 1.1.2 Assessment criteria

In line with the guiding principles above, we base our evaluation of real-economy companies' reporting and disclosure of GHG emissions on the assessment criteria in Table 1 C. These criteria also apply to financial institutions' tracking and disclosure of scope 1, 2 and 3 emissions. In addition, Table 1 D provides the criteria that financial institutions must meet for tracking and disclosing their invested emissions (scope 3, category 15).

**Table 1 C: Assessment criteria for tracking and disclosure of emissions (real-economy companies and financial institutions)**

1C Tracking and disclosure of emissions	
<p>Assessed for the following emission scopes individually:</p> <ul style="list-style-type: none"> <li>■ Scope 1</li> <li>■ Scope 2</li> <li>■ Scope 3 upstream</li> <li>■ Scope 3 downstream</li> <li>■ All emission scopes from subsidiary companies</li> </ul>	<p><b>Very high</b></p> <p>The company provides useful information and data on activity indicators and emission intensities, in addition to the good practice disclosure criteria below.</p>
	<p><b>High</b></p> <p>The disclosure of emissions from the emissions scope is complete, and presented in a way that facilitates a thorough understanding:</p> <ul style="list-style-type: none"> <li>✓ An annual disclosure;</li> <li>✓ A breakdown of the data to specific emission sources;</li> <li>✓ The presentation of historical data for the same emission sources;</li> <li>✓ If relevant: disclosure of non-GHG climate forcers;</li> <li>✓ The company explains why any omitted emissions categories are not tracked.</li> </ul>
	<p><b>Moderate</b></p> <p>The disclosure of emissions from the emissions scope is complete, but the level of detail does not facilitate a thorough understanding of emission sources.</p>
	<p><b>Low</b></p> <p>The emissions scope is not tracked and disclosed, or only to a limited extent.</p>

**Table 1 D: Additional assessment criteria for tracking and disclosure of emissions (financial institutions)**

1D Tracking and disclosure of emissions	
<p>Assessed for financial institutions' emissions from investments (scope 3, category 15)</p>	<p><b>Very high</b></p> <ul style="list-style-type: none"> <li>✓ Financed emissions are calculated using the operational or financial control approach across all financial services. Reporting is disaggregated by financial service and sector.</li> <li>✓ The financial institution's reported scope 3 emissions cover investees', borrowers', or clients':                             <ul style="list-style-type: none"> <li>■ Absolute scope 1 and scope 2 emissions;</li> <li>■ Absolute scope 3 emissions, reported separately;</li> <li>■ Avoided emissions, where applicable; and</li> <li>■ Emission removals, where applicable.</li> </ul> </li> </ul>
	<p><b>High</b></p> <ul style="list-style-type: none"> <li>✓ Financed emissions are calculated using the operational or financial control approach across all financial services. Reporting is disaggregated by financial service and sector.</li> <li>✓ The financial institution's reported scope 3 emissions cover investees', borrowers', or clients':                             <ul style="list-style-type: none"> <li>■ Absolute scope 1 and scope 2 emissions; and</li> <li>■ Absolute scope 3 emissions, based on estimates if needed.</li> </ul> </li> <li>✓ Financial institutions must report investee companies' scope 3 emissions according to the timeline defined in the guiding principles.</li> </ul>
	<p><b>Moderate</b></p> <p>The financial institution's disclosure of investee companies' emissions is incomplete but covers at least all emissions from financial services provided to the most carbon-intensive clients/sectors. If data on those emissions is not available, financial institutions should provide estimates instead. <i>(The assessment is based on expert judgement.)</i></p>
	<p><b>Low</b></p> <p>The financial institution's disclosure of investee companies' emissions excludes certain emission sources without a justification.</p>

# Setting emission reduction targets

This section assesses whether headline targets are specific and substantiated, focusing on the coverage of emission sources in the headline pledge (section 2.1), emission reductions in the headline pledge (section 2.2), and substantiation of the headline pledge through interim targets (section 2.3).

**Companies' headline climate change pledges encompass a broad range of target setting approaches:**

- Some companies opt for specific GHG emission reduction targets, but most major companies are moving towards “net zero” pledges (or similar terminology), which envisage emission reductions combined with offsetting some emissions.
- Some companies' headline pledges are long-term visions for 2040 or 2050, while others focus on shorter-term commitments for 2025 or 2030.
- Some targets cover a company's full scope of emissions throughout the value chain, while others focus only on specific emission sources.
- Some companies do not commit to absolute GHG-related targets, but rather focus on emission intensity targets (emissions per unit of output), or targets associated with decarbonisation indicators, such as renewable energy targets.

Some companies select from only one of these target setting approaches, while others combine several, or all of them.

The high diversity of target setting approaches could stem from differences in companies' specific circumstances, different understandings of mitigation options, and understanding of the materiality of scope 3 emissions. Further, there are differences of opinion and mixed messages regarding the type of targets that represent the highest standard of climate change mitigation ambition.

**Regardless of the type of target set and the terminology used, it is most crucial that the**

**targets send a clear signal for immediate action to decarbonise the entire value chain.** Limiting global temperature increase to 1.5°C requires the rapid decarbonisation of all sectors, to reach a state of net-zero global CO<sub>2</sub> emissions by around 2050, net-zero GHG emissions by around 2060 to 2070, and net-negative emissions thereafter (Rogelj et al., 2018). The pathway to net-zero is crucial: a 1.5°C limit requires immediate action to achieve a reduction in global CO<sub>2</sub> emissions of about 45% from 2010 levels by 2030 (Rogelj et al., 2018); further delay could put the Paris Agreement objectives beyond reach.

**Targets should also not mislead consumers, shareholders and observers, whose demands represent a vital pressure mechanism for raising ambition.** Nor should they mislead regulators into avoiding or limiting the implementation of policies to incentivise ambitious climate action. Financial institutions do not have direct control over a large share of their emissions (scope 3 category 15, financed emissions), which can be reflected in the way they set targets. Financial institutions should reflect the objective of reducing emissions of their investee companies and clients in their target setting, not just financial institution's portfolio emissions. Financial institutions exposed to hard-to-abate sectors, for example, will face a slower transition towards net-zero emission than financial institutions with lower exposure to such sectors. Despite the indirect nature of the link between financial markets and real-world economic decisions, large diversified financial institutions should have clear reduction targets and strategies that reflect global emission reduction pathways.

## 2.1 Coverage of emission sources

### 2.1.1 Guiding principles

**Targets should be explicit in their coverage of the complete spectrum of emission sources and greenhouse gases, to maximise impact and**

**avoid misleading communication.** The most comprehensive targets cover the full GHG emission footprint of a company across its entire value chain, including upstream and downstream scope 3 emissions, and non-GHG

climate forcers where relevant (see section 1). Targets with partial scope coverage have the potential to mislead: disclaimers get lost or may not be well understood by the audiences of climate pledge communications. Companies should explicitly set out the coverage of their headline climate pledges to avoid misinterpretation and to ensure accountability.

**Coverage of all mandatory scope 3 emission categories is highly relevant, despite uncertainties and indirect influence.** Scope 3 emissions can entail a degree of uncertainty, particularly for complex emission sources related to land-use such as upstream food processing, and downstream emissions associated with consumer behaviour and product use. The decarbonisation of these emissions may also depend partially on actions taken by others. Despite these uncertainties, the inclusion of all mandatory<sup>1</sup> scope 3 emission sources from the GHG Protocol's Scope 3 Standard in companies' targets is crucial. This provides a clear incentive for all actors with a potential influence on the decarbonisation of emission sources to take measures to do so. For manufacturers of cars, electric appliances, or electronic devices, scope 3 emissions often account for the major share of those companies' emissions, and the companies are the actors with the greatest influence to decarbonise those emission sources, by manufacturing products with alternative or more efficient technologies. Even in the cases where companies have a lower degree of influence in the reduction of scope 3 emissions, this does not justify their exclusion from targets; the full inclusion of scope 3 emissions in targets can incentivise companies to cooperate with suppliers and consumers to mutually support each other to reduce emissions, including to seek out new solutions where needed. Targets that omit Scope 3 emissions carry a significant potential to mislead, since Scope 3 emissions account for a large portion of most companies' climate impact.

## Additional guiding principles for financial institutions

Financial institutions should set targets for the

complete spectrum of emission sources and GHGs, but should highlight that scope 3 emissions (financed emissions, i.e. scope 1, 2 and 3 emissions of investee companies, borrowers, or clients) account for the main share of financial institutions' GHG footprint.

**Financial institutions' scope 3 targets should cover all financial services and sectors (and accounts, in the case of insurance companies).**

Targets with incomplete scope may be misleading, for example where targets do not cover certain financial services. The scope of targets must be clearly communicated for full transparency.

We acknowledge that data availability is a major challenge, and in some cases financial institutions are not yet able to track and disclose their scope 3 emissions across all their financial services. **For full transparency, financial institutions provide estimates of financed emissions for which data is not available.** In all cases, financial institutions' targets must cover their most relevant sources of emissions.

### 2.1.2 Assessment criteria

In line with the guiding principles above, our evaluation of real-economy companies' target coverage is based on the assessment criteria in Table 2 A. These criteria also inform our assessment of financial institutions' targets for scope 1 and 2 emissions and relevant scope 3 emissions, such as business travel and procurement. As the largest share of financial institutions' GHG footprint comes from financed emissions (scope 3, category 15), Table 2 B outlines additional criteria that relate to financed emissions. These criteria complement our assessment of financial institutions' target coverage.

The assessment of the coverage of emission sources in targets is independent from the assessment of the coverage of tracking and disclosure in section 1.

<sup>1</sup> The inclusion of non-mandatory scope 3 emission categories is in some cases essential to understand a company's climate footprint but is not always constructive. See section 1.1

**Table 2 A: Assessment criteria for coverage of emission sources in targets (real-economy companies and financial institutions)**

## 2A Assessment criteria for coverage of emission sources in targets

### Transparency

-  The company clearly communicates the scope and year of their target.
-  N/A
-  The company does not [or not clearly] communicate scope or year of their target.

### Integrity

-  The company's target meets the good practice criteria and covers all subsidiary companies.
-  The company's target covers Scope 1, 2, and 3 emissions in full (including all upstream and downstream emissions). Where relevant, the target also covers non-GHG climate forcers.
-  The company's target includes Scope 1 and Scope 2 emissions in full and includes major Scope 3 emissions. Where relevant, the target also covers non-GHG climate forcers.
-  The company's target coverage omits either Scope 1, 2 or 3 emissions or - if relevant - non-GHG climate forcers.
-  The company's target is unclear, untransparent and no assessment is possible.

**Table 2 B: Assessment criteria for coverage of financed emissions (scope 3, category 15) in targets (financial institutions)**

## 2B Coverage of emission sources in targets

### Transparency

-  The company clearly communicates the scope and year of their target.
-  N/A
-  The company does not [or not clearly] communicate scope or year of their target.

### Integrity

-  The financial institution sets targets for financed emissions (scope 3, category 15), covering 100% of its financial services and for all sectors.
-  The financial institution sets targets for financed emissions (scope 3, category 15), covering at least emissions from their most relevant financial services.  
Asset classes without targets are justified and communicated transparently.  
*(The assessment is based on expert judgement.)*
-  The company's target coverage omits 3 emissions.
-  The company's targets are unclear, untransparent and no assessment is possible.

## 2.2 Emission reductions in the headline pledge

### 2.2.1 Guiding principles

**Climate pledges only send a meaningful signal for decarbonisation if they explicitly include deep emission reduction commitments that are independent of offsetting and carbon dioxide removals.** Headline pledges may be directly specified in the form of emission reduction targets, they may be accompanied by such targets, or they may not specify any emission reduction targets at all. The achievement of the Paris Agreement objectives requires the deep decarbonisation of all companies across all industries (Rogelj et al., 2018). The depth of corporate emission reduction targets is critical for determining alignment with 1.5°C compatible emission trajectories.

A state of global net-zero CO<sub>2</sub> emissions that is compatible with limiting global warming to 1.5°C require the deep reduction of emissions to 91%–97% below 2010 by 2050 (Rogelj et al., 2018), alongside a limited role for carbon dioxide removals to neutralise a small volume of residual emissions from the emission sources that are hardest to abate. Corporate climate pledges only contribute to the Paris Agreement objectives in a meaningful way if they put emission reductions across the entire value chain in the spotlight. Such pledges are also more constructive if they avoid ambiguous terminology that can distract from this focus, for example by remaining unspecific on emissions reductions to be achieved without relying on offsets or carbon dioxide removal.

**Corporate emission reduction commitments must be deep enough to align with a 1.5 °C compatible emission pathways.** Recently published literature identified emission pathways and benchmarks globally, for countries, and for corporates aligned with the Paris Agreement’s objective to hold global

average temperature increase to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C. For example, the Net Zero Standard of the Science-Based Targets initiative (SBTi) requires companies from any sector with net zero targets—except the forestry, land-use, and agriculture sectors—to explicitly commit to emission reductions of at least 90% below 2019 levels across all emission scopes (SBTi, 2021). The commitment to such deep emission reductions ensures that the net-zero terminology is not misleading, regardless of the target year, but it is not alone a measurement of sufficiency in terms of 1.5°C compatibility.

We consider a stepwise approach to assess the alignment of the emission reductions in a headline pledge with 1.5°C compatible trajectories or benchmarks. First, we compare the absolute emissions reductions to what is considered under 1.5°C compatible global least-cost emissions pathways. Second, we compare the emission reductions to benchmarks indicating key 1.5°C compatible milestones for specific sectors identified in the literature (CAT, 2020; Boehm et al., 2021; Dietz et al., 2021; IEA, 2021; SBTi, 2021; UNFCCC, 2021). The development of a comprehensive framework to assess the alignment of corporate climate pledges with 1.5°C compatible emission pathways remains beyond the scope of this methodology, and an important avenue for future work.

### 2.2.2 Assessment criteria

In line with the guiding principles above, we evaluate the specificity of emission reduction targets in companies’ headline pledges, based on the assessment criteria in Table 2 C. These criteria apply to real-economy companies and financial institutions alike.

**Table 2 C: Assessment criteria for the specificity of emission reduction targets in headline pledges (real-economy companies and financial institutions)**

## 2C Emission reductions in the headline pledge

### Transparency

**High** The company's main headline climate pledge is a specific target for emission reductions, that is independent from neutralisation through carbon dioxide removals or emission reduction offsets.

**Moderate** The company's headline pledge is dependent on neutralisation through carbon dioxide removals or emission reduction offsets, but the company's communication of that headline pledge also prominently specifies what portion of that target will be achieved through emission reductions.

**Low** The communication of the company's headline pledge does not prominently specify what portion of that target will be achieved through emission reductions.

### Integrity

Both of the following criteria are fulfilled:

- ✓ If the headline pledge is a net-zero or carbon neutrality target, the specific emission reduction component is equivalent to at least 90% below 2019 levels. This ensures that the net-zero terminology is not misleading, regardless of the target year, but it is not alone a measurement of sufficiency in terms of 1.5°C compatibility.
- ✓ The specific emission reduction component of the headline target is in line with 1.5°C compatible trajectories or benchmarks for the sector, according to available literature.

**High** The criteria for high integrity are met for at least one of the company's major relevant emission scopes, while for other emission scopes the sufficiency or insufficiency of targets cannot be confirmed.

**Moderate** No specific emission reduction target is pledged, or the specific emission reduction target is not in line with 1.5°C trajectories or benchmarks for the sector, according to available literature.

**Low** An assessment of the specific emission reduction target is dependent on the availability of sector-level benchmarks, or methodologies to assess the sector-specific emission reduction reductions in line with the Paris Agreement temperature objectives. The unavailability of these benchmarks or methodologies in the existing literature does not allow for an assessment of the specific sector at this point in time.

## 2.3 Substantiation through interim targets

### 2.3.1 Guiding principles

**Specific short and medium-term interim targets requiring immediate action and accountability are vital for credible corporate commitments to fight climate change, and should be the main focus of corporate target setting.** Long-term visions can provide a useful signal, but only when accompanied with adequately ambitious interim targets within a timeframe that requires immediate action. Pathways to decarbonisation that are characterised by initially slow or delayed action will lead to a larger volume of cumulative emissions (Rogelj et al., 2018). Delayed action thus requires even deeper emission reductions and larger amounts of highly uncertain carbon dioxide removal at a later date and can put the objective to limit global warming to 1.5°C beyond reach. Within a corporate environment, we consider that a maximum 5-year timeframe for interim targets is good practice, since it is particularly challenging to establish a credible accountability mechanism for targets set over the medium or longer-term.

**Interim targets must be ambitious enough to align with 1.5°C compatible emission pathways, similar to emission reduction commitments in the headline pledge (section 2.2.1).** To stand a reasonable chance of limiting global warming to 1.5°C, global CO<sub>2</sub> emissions must decrease by around 45% between 2010 and 2030 (Rogelj et al., 2018). Based on these latest scientific findings, for example, the Hague District Court's (2021) ruling from 2021 mandates Shell to reduce its CO<sub>2</sub> emissions across all emission scopes (scope 1, scope 2 and scope 3) by net 45% by 2030 compared to 2019 levels. Where available in the literature, benchmarks for specific decarbonisation indicators provide key 1.5°C compatible milestones for specific sectors and regions at the global, country, and corporate level (CAT, 2020; Boehm et al., 2021; Dietz et al., 2021; IEA, 2021; SBTi, 2021; UNFCCC,

2021). The assessment of interim targets in the transport sector, for example, can build up on Paris Agreement compatible benchmarks for the phase out of internal combustion engines in light duty vehicles (LDVs) by 2040 globally, and even earlier in key automobile markets such as the European Union or the United States (CAT, 2020; UNFCCC, 2021). Emission intensity targets by automobile manufacturers for their future LDV vehicle fleets being sold can be directly compared to such benchmarks to assess their compatibility with 1.5°C emission pathways in the transport sector. The development of a comprehensive framework to assess the alignment of interim targets with 1.5°C compatible emission pathways remains beyond the scope of this methodology, and an important avenue for future work.

### 2.3.2 Assessment criteria

In line with the guiding principles above, our evaluation of companies' interim targets is based on the assessment criteria in Table 2 D. These criteria apply to real-economy companies and financial institutions alike.

**Table 2 D: Assessment criteria for substantiating long-term pledges through interim targets (real-economy companies and financial institutions)**

## 2D Substantiation of long-term pledges through interim targets

### Transparency

-  The company prominently provides details of interim targets alongside headline pledges.
-  The company has interim targets that are not easily accessible/found.
-  The company does not refer to any interim targets.

### Integrity

-  Interim targets comply with all the following criteria:
  -  Targets are aligned with long-term vision in terms of coverage and depth.
  -  Targets are likely aligned with a 1.5°C trajectory for the sector (according to available literature for specific sectors and global economy-wide emissions pathways)
  -  First interim target is on a timescale that likely requires immediate action and accountability (maximum 5 years in the future).
-  Interim targets exist but only comply with two of the good practice criteria.
-  Interim targets do not exist or do not comply with at least two of the good practice criteria.
-  The information provided does not facilitate an assessment; or the absence of sectoral decarbonisation benchmarks does not allow to determine whether a company's interim target is aligned with a 1.5°C trajectory for the sector.

# Reducing own emissions

Encompassing measures for deep emission reductions are the backbone of ambitious corporate climate targets. As companies' emissions profiles vary widely, there is not a standardised set of measures that all companies can implement. The integrity and robustness of companies' decarbonisation efforts must be considered against each company's circumstances and emission profile (section 3.1).

Electricity-related emissions are relevant for all companies to address and are often a central feature of companies' plans and claims. For this reason, we single out renewable electricity procurement for deeper assessment (section 3.2).

# 3.1 Emission reduction measures

## 3.1.1 Guiding principles

**Corporate actors must implement encompassing and deep decarbonisation measures. Decarbonisation efforts should focus on all relevant emission sources across all three scopes.** Adopting readily available measures should be the first priority for companies that claim to be on a decarbonisation pathway, followed by the scaling up of proven flagship projects and—if necessary—investments in research and development to find new decarbonisation solutions. Further, companies should have a clear plan to phase out all carbon-intensive infrastructure and products. Ambitious companies should plan for and implement a set of measures that leads to complete or near decarbonisation of their activities, depending on the sector they are active in.

**Transparent disclosure and information sharing can support replication and the identification of new solutions.** Companies can show real climate leadership by prioritising transparent exchange on climate change mitigation over industry competition, to support replication of effective measures and to collaborate for the identification of new solutions. Reports that refer to individual flagship projects may potentially inspire readers, but further details are required to support replication and facilitate an assessment of the company's ambition. Companies' planned measures can only be fully appraised if their plans contain details on the scale of planned measures using indicators that demonstrate what proportion of a company's activities will be addressed by the measures, and what

### Guiding principles for financial institutions

**Financial institutions should focus their emission reduction efforts on the emissions associated with all financial services provided.** Although financial institutions should also address emissions from, for instance, energy

use in offices, procurement of products, and business travel, their focus should be on reducing emissions associated with their investments, borrowing, and insurance underwriting (scope 3, category 15). Emissions financed through financial institutions' financial services are on average 700 times larger than reported operational emissions (CDP, 2020).

**Addressing invested emissions requires the development and implementation of comprehensive strategies for exclusion, engagement, and divestment.** Whereas a direct causal link exists between emission reductions that companies realise within their value chain and real economy emission levels, financial institutions have only indirect influence over real economy emissions apart from their minor scope 1, scope 2, and upstream scope 3 emissions. Climate-related investment targets may lead to lower emission levels only if they successfully incentivise the investee company, borrower, or client to change their activities, outputs, and behaviour (Lütkehermöller et al., 2020).

**In their strategies, financial institutions should prioritise the exclusion of clearly misaligned activities investee companies, borrowers, and insurance underwriting.** Specifically, financial institutions should not provide financial services to companies active in sectors identified in the exclusion/divestment column of Table 3 A. Ideally, exclusion is immediate, covers all types of financial services, and already applies to companies with small shares of income generated from excluded activities.

**Financial institutions can have direct influence on investee companies' or clients' corporate strategy and climate risk mitigation approach through engagement.** The key rationale behind engagement is that financial institutions are most likely to pressure climate laggards into climate action by using their influence as active

shareholders, rather by simple divestment. Financial institutions' engagement policy should generally cover all financial services and be targeted on the sectors outlined in the engagement column of Table 3 A. The feasibility, relevance, and success of active engagement depends on the financial service, the target, and how strongly the target is exposed to emission intensive activities. Asset owners and managers (this includes insurance companies with significant asset portfolios) investing in equity are specifically well positioned to exercise their stewardship role, both through direct (e.g. direct communication, voting on shareholder resolutions) and indirect (e.g. participation in engagement initiatives) engagement channels. Banks and insurers with corporate or sovereign fixed income and underwriting portfolios can

also engage their borrowers on climate-related requirements, although engagement channels may be different. Client engagement for banks with large consumer lending portfolios is also feasible, for example through specific product offering and information campaigns. In all cases, financial institutions should define clear engagement horizons and consequences of non-compliance to put themselves in a position to credibly increase pressure where continuous engagement proves unsuccessful.

**Where engagement proves unsuccessful, financial institutions should completely divest from, or terminate financial service provision for, companies exposed to emission intensive activities as defined in the exclusion/divestment column of Table 3 A.** It is important that financial institutions not just terminate the

**Table 3 A: Engagement and exclusion/divestment focus areas, based on Laplane and van Loenen (2021)**

**Engagement**

Financial institutions should engage companies, among other, on:

- Upstream energy:
  - Coal mining is unacceptable.
  - Oil production is unacceptable.
  - Gas production is unacceptable.
- Midstream energy:
  - Fossil-fuel transport infrastructure and infrastructure for fossil-fuel related trade in unacceptable.
- Downstream energy:
  - Coal-fired power generation is unacceptable.
  - Oil-fired power generation is unacceptable.
  - Gas-fired power generation is unacceptable.
  - Biomass-fired power generation is unacceptable where the generation does not comply with the global standards of the Roundtable of Sustainable Biomaterials (RSB).
  - Renewable energy use should be upscaled.

AFOLU.

- High-carbon stock land use change is unacceptable.
- Intensive livestock farming is not acceptable.

- Companies do not participate in lobbying (attempting to influence decisions made by regulators) aimed at weakening climate policy.
- Companies integrate climate change criteria in their procurement policies.

**Exclusion / Divestment**

Financial institutions exclude / divest from companies active in, among other, to:

- Coal mining.
- Oil and gas production (conventional and unconventional).
- Fossil-fuel transport infrastructure (coal, oil, and gas).
- Coal-fired power generation.
- Oil-fired power generation.
- Gas-fired power generation.
- High-carbon stocks land-use change.
- Intensive livestock farming.

provision of financial services for specific projects, but that they ensure that finance is not misused by beneficiaries by completely withdrawing support for misaligned investee companies, borrowers, or clients. Analogue to the financial institutions’ exclusion strategy, divestment from misaligned companies should be timely and across all financial services.

**We acknowledge that exclusion, engagement, and divestment policies may be more complex for some financial services.** For full transparency, financial institutions should justify where their policies do not cover all

financial services. In all cases, financial institutions should define exclusion, engagement, and divestment policies that at least cover emissions from financial services provided to energy sector companies as a minimum benchmark.

### 3.1.2 Assessment criteria

In line with the guiding principles above, the evaluation of real-economy companies’ and financial institutions’ emission reduction measures is based on the assessment criteria in Table 3 B and Table 3 C, respectively.

**Table 3 B: Assessment criteria for real-economy companies’ emission reduction measures**

## 3B Emission reduction measures

### Transparency

**High**

The company provides detailed information on emission reduction measures for most sources of emissions. The information includes details on:

- The expected amount of emission reductions or the emission levels the company expects to reach by its target year; and
- What share of relevant emission sources are addressed by the various measures.

**Moderate**

The company provides detailed information on reduction measures but only for some sources of emissions. <OR>

The company provides information on reduction measures for most sources of emissions, but not on:

- The expected amount of emission reductions or the emission levels the company expects to reach by its target year; <AND/OR>
- What share of relevant emissions are targeted by the various measures.

**Low**

The company provides no or limited information on reduction measures.

### Integrity

**High**

The company currently takes a proactive approach to the implementation of climate change mitigation measures and those measures are likely aligned with requirements to transition to net-zero emissions. This requires, at a minimum, that the company:

- ✓ Adopts demonstrated good practice emission reduction measures;
- ✓ Scales-up demonstrated flagship projects to mainstream those measures across the organisation;
- ✓ Invests in the development of new solutions where necessary;
- ✓ Sets out a clear plan to phase out all carbon-intensive infrastructure and all carbon-intensive products; and
- ✓ Covers all relevant emission sources from the company’s emission footprint (including scope 1, 2 and 3).

**Moderate**

The company currently takes a semi-proactive approach to the implementation of climate change mitigation measures but those measures may not necessarily be aligned with a sector specific 1.5 °C decarbonisation pathway, either because one of the above criteria is overlooked, or because the measures are too shallow.

**Low**

Either of the below:

- ✗ The company has adopted few or no good practice emission reduction measures that have been demonstrated by other companies; or
- ✗ These measures cover only a small share of the company’s carbon footprint.

**?**

The company’s measures are unclear and no assessment is possible.

*(The assessment is based on expert judgement. Current emission reduction trends and achievement of past targets may support the assessment that a given company implements adequate reduction measures.)*

Table 3 C: Assessment criteria for financial institutions' emission reduction measures

## 3C Emission reduction measures

### Transparency

High	<p>The financial institution provides detailed information on emission reduction measures for most sources of emissions (scope 1, 2 and 3).</p> <p>The financial institution provides dedicated reporting on exclusion, engagement, and divestment policies for all financial services, as well as on implementation and impact of approaches.</p>
Moderate	<p>The financial institution provides detailed information on emission reduction measures for most sources of emissions (scope 1, 2 and 3).</p> <p>The financial institution provides dedicated reporting on exclusion, engagement, and divestment policies for at least the most relevant sources of emissions, and on the implementation and the expected impact of its approaches.</p>
Low	<p>The company provides no or limited information on reduction measures.</p>

### Integrity

High	<p>The financial institution adopts demonstrated good practice emission reductions measures to address relevant emission sources across scope 1, 2 and upstream and downstream scope 3.</p> <p>In addition, for financed emissions (scope 3, category 15), the financial institution applies the following approaches across all financial services.</p> <ul style="list-style-type: none"> <li>✓ The financial institution has a comprehensive exclusion policy, covering at least the sectors defined in the guiding principles; and</li> <li>✓ The financial institution has a comprehensive engagement and stewardship strategy, covering at least the sectors defined in the guiding principles.</li> <li>✓ Where relevant and required: the financial institution proactively divests from clearly misaligned activities (exclusion/divestment column of Table ), as well as where engagement activities on the key focus areas (engagement column of Table ) are not successful.</li> </ul>
Moderate	<p>The financial institution takes a semi-proactive approach and adopts demonstrated good practice emission reduction measures to address relevant emission sources across scope 1, 2 and upstream and downstream scope 3</p> <p>The financial institution applies the following approaches across the most significant financial services and sectors.</p> <ul style="list-style-type: none"> <li>✓ The financial institution has a comprehensive exclusion policy, covering the most relevant sectors defined in the guiding principles; and</li> <li>✓ The financial institution has a comprehensive engagement and stewardship strategy, covering the most relevant sectors defined in the guiding principles (or defines other comprehensive targeting approaches which effectively ensure engagement across harmful sectors and clients).</li> <li>✓ Where relevant and required: the financial institution proactively divests from clearly misaligned applicable activities, as well as where engagement activities are not successful.</li> </ul> <p><i>(The assessment is based on expert judgement.)</i></p>
Low	<p>The financial institution does not meet one or more of the following criteria:</p> <ul style="list-style-type: none"> <li>✗ The financial institution has a comprehensive exclusion policy, covering the most relevant sectors defined in the guiding principles; and</li> <li>✗ The financial institution has a comprehensive engagement and stewardship strategy, covering the most relevant sectors defined in the guiding principles (or defines other comprehensive targeting approaches which effectively ensure engagement across harmful sectors and clients).</li> <li>✗ Where relevant and required: the financial institution proactively divests from clearly misaligned applicable activities, as well as where engagement activities are not successful.</li> </ul>
?	<p>The company's measures are unclear and no assessment is possible.</p>

## 3.2 Procurement of renewable electricity

### 3.2.1 Guiding principles

**Companies reduce electricity-related emissions in different ways. How a company goes about sourcing renewable electricity makes a big difference in the actual emission impact and the credibility of renewable electricity consumption claims.**

Electricity-related emissions are a relevant emissions source for all companies to address and represent a key component of many companies' climate change strategies and pledges. For some companies, those emissions account for the lion's share of their emissions. Other companies may have relatively fewer emissions from electricity consumption today, for instance those in the heavy industry, aviation, and shipping sectors. However, electricity is likely to become increasingly important for those companies, as they move away from fossil fuels to alternatives such as hydrogen and ammonia, for the production of which electricity is needed. As alternative fuels are not yet produced at scale, some companies are investing in new facilities that will produce, for instance, e-methanol or e-hydrogen. Those fuels are only zero carbon if they are based on green electricity.

Companies have a variety of options for sourcing renewable electricity (Table 3 D). While for some an emissions reduction claim may be legitimate, for others the impact is unclear. As the impact of projects vary and is often unclear, it is best practice for companies to combine high quality renewable electricity procurement with the most accurate and transparent emission reporting, including the location-based accounting method alongside the market-based accounting method (see section 1.1).

**On-site renewable electricity generation with on-site storage offers the best guarantee that**

**companies use renewable electricity without placing a significant burden on grid infrastructure.** This approach reduces scope 1 emissions in the case that those renewable energy technologies replace existing on-site fossil-fuelled generators. Scope 2 emissions are reduced in the case that new renewable energy installations shift energy demand away from external energy procurement, bringing renewable energy generation under the direct control of actors (NewClimate Institute and Data-Driven EnviroLab, 2020). On-site storage systems help take pressure off the grid when a lot of electricity is generated, for instance on very sunny or windy days, or when demand is low. It also ensures that the company uses renewable electricity when they do not generate sufficient electricity to cover their demand. In contrast, companies that do not install electricity storage systems, rely on the grid when their electricity production is lower than their electricity demand. Therefore, the option of on-site generation with on-site storage is preferable and more likely to guarantee that companies use renewable electricity for their activities.

**Monitoring and matching energy consumption with renewable energy on a 24/7 basis** can significantly increase the credibility of claiming that electricity is derived from renewable sources, as long as the electricity is procured from high quality procurement options that would likely not have existed without the company's financial support. This procurement option ensures that a company's hourly energy consumption is matched with clean energy generation, including at times of peak demand. Monitoring and matching energy consumption at an hourly basis is a relatively new construct and still faces several challenges, such as the complexity of matching consumption with real-time electricity generation (Avelar and Boer, 2021).

**Higher quality Power Purchase Agreements (PPAs) may lead to additional renewable electricity capacity and fewer GHG emissions.**

A PPA is a long-term contract between an electricity provider and an electricity consumer, usually spanning 10-20 years. The consumer agrees to purchase a certain amount of electricity from a specific asset under a pre-determined pricing arrangement. PPAs are generally signed with new renewable energy installations and form part of the project investment decision (NewClimate Institute and Data-Driven EnviroLab, 2020). PPAs can also be signed for existing installations, in which case it is less likely the PPA results in additional renewable electricity capacity. However, it may be that existing installations would cease operations if the operator cannot sign a new PPA.

**Investments in renewable electricity capacity are likely to lead to additional renewable energy capacity but are not necessarily a suitable approach to reduce electricity-related emissions.** Companies can only claim a neutralisation of own electricity-related emissions if no other parties can enter into agreement to claim renewable energy from those installations, and that the power is marketed directly (NewClimate Institute and Data-Driven EnviroLab, 2020). Without the guarantee that other actors cannot claim the renewable electricity, there is a high risk of double counting renewable electricity.

**Energy suppliers can charge a premium for renewable energy capacity expansion that is dedicated to the construction of additional renewable electricity capacity. Such a premium can be bundled with any form of energy procurement model, such as RECs or a PPA, regardless of the volume of energy procured.**

More ambitious electricity providers offer their clients an independently verified guarantee that their electricity generation stems from renewable energy installations not older than five or ten years (NewClimate Institute and Data-Driven EnviroLab, 2020). A capacity expansion premium alone cannot underpin the claim of the neutralisation of current electricity emissions, but rather it can be add-on to improve the quality of any other energy

procurement model and contribute to more renewable electricity capacity in the near future.

**Renewable Energy Certificates (RECs) – also known under various names, such as Guarantees of Origin (GOs) or Energy Attribute Certificates (EACs) – often do not contribute to additional renewable electricity capacity.**

They are not a suitable approach for corporates to address electricity-related emissions. While the purchase of RECs could in theory send a signal to investors that there is demand for renewable energy, there are strong indications that RECs do not generally contribute to the development of additional renewable energy installations in practice. Oversupply of certificates and associated low prices, along with implicit double counting, are key reasons for this problem. For example, in Europe there is an oversupply of RECs at low prices that mostly stems from decades-old hydropower installations in Scandinavia (NewClimate Institute and Data-Driven EnviroLab, 2020). Bjørn et al. (2022) found that the use of RECs by companies with SBTi-approved reduction targets leads to an inflated estimate of those companies' abatement efforts. The researchers concluded that 42% of committed scope 2 emission reductions may not result in real-world mitigation (Bjørn et al., 2022).

Further, the sale of RECs displaces more carbon-intensive energy to other consumers. When a customer purchases RECs, the actual energy mix that a certificate owner receives does not change, nor does the energy mix in the grid. If fossil-fired power plants and renewable energy technologies feed electricity into a grid, the actors who draw from that grid would all receive a combination of renewable- and fossil-fired electricity. Consequently, if the owner of a renewable energy generation facility were to sell RECs to one actor, that actor may claim a lower grid emission factor to determine its scope 2 GHG emissions but would still continue to receive the same combination of renewable- and fossil-fired electricity. Other customers on the same grid need to apply a higher grid emissions factor, so their reported electricity-related emissions will increase (NewClimate Institute and Data-Driven EnviroLab, 2020).

RECs can be bundled or unbundled with the electricity that a company consumes:

- **Unbundled RECs:** the consumer purchase RECs on the spot market from a third party, separately from the purchase of electricity from another supplier.
- **Bundled RECs – third-party generated:** the consumer purchases electricity and RECs from one and the same supplier, but this supplier has procured the RECs from a third party. In this situation, the supplier may sell fossil fuel power electricity and green it with the sale of RECs.
- **Bundled RECs – supplier generated:** the consumer purchases renewable electricity and associated RECs from one and the same supplier.
- **Tailored renewable energy contracts combine key features of RECs and PPAs.** Under this model, customers sign a contract with a renewable energy supplier and commit to purchasing renewable electricity and associated RECs for a longer period of time and usually from a determined source or asset. The electricity often comes from a new installation, although this is not necessarily the case (NewClimate Institute and Data-Driven EnviroLab, 2020).

Bundled RECs and tailored renewable energy contracts carry a lower risk of implicit double counting and are likely to send a stronger signal to the market than unbundled RECs, although still a much weaker one than, for instance, PPAs.

**Table 3 D: Overview of renewable electricity procurement options**

Renewable electricity generation or procurement construct	General likelihood of emission reduction impact
<p><b>The installation of renewable electricity with storage technologies</b> on a company’s own premises can ensure that a company is directly using renewable energy, without placing any significant burden on grid infrastructure.</p> <p><b>Monitoring and matching energy consumption with renewable energy on a 24/7 basis</b> can significantly increase the credibility of claiming that electricity is derived from renewable sources, as long as the electricity is procured from high quality procurement options that would likely not have existed without the company’s financial support.</p>	 <p>Very high</p>
<p><b>The installation of renewable electricity without storage</b> on a company’s own site can directly create additional renewable energy capacity. However, actors that do not have on-site storage will still rely on the national grid when they do not generate sufficient energy themselves. Therefore, this option is not as good as having on-site renewable electricity and storage technologies.</p> <p>The arrangement of a higher quality <b>Power Purchase Agreement (PPA)</b> for new and local generation is likely to ensure additional renewable electricity capacity that would not exist in the PPA’s absence. However, the degree of additionality depends upon the specific circumstances and overlap or competition with other potential project developers. It is therefore not necessarily guaranteed that a signed PPA will eliminate energy-related emissions. PPAs should include the purchase and transfer of any renewable energy attribution certifications to reduce the risk that the renewable energy claim is double counted.</p> <p><b>Investments in renewable electricity development</b> can contribute to additional renewable electricity capacity and may be an effective strategy for companies to pursue, especially in countries with low levels of renewable electricity penetration. However, investments in renewable electricity development must also be seen as a business case. Companies should not claim that their equity share in RE projects reduces their electricity-related emissions, unless they procure the electricity and attribution certificates from those own RE investments. Otherwise, there is a material risk that renewable electricity is double claimed.</p>	 <p>High</p>
<p><b>A capacity expansion premium</b>, in which electricity suppliers charge a premium on electricity sales which is dedicated to funds for additional renewable electricity capacity installations, can channel direct support to additional renewable energy capacity. This model alone cannot underpin the claim of the neutralisation of current electricity emissions, but rather it can be add-on to improve the quality of any other energy procurement model.</p> <p><b>Procurement of renewable energy certificates (RECs) directly generated by the energy supplier (bundled RECs)</b> does not currently send any meaningful signal to potential developers of new renewable energy capacity due to oversupply and low prices. They may also simply displace more carbon intensive electricity to other consumers in the same market (see Box #).</p>	 <p>Moderate</p>
<p><b>RECs generated by a third party (unbundled RECs)</b> face the same limitations as bundled RECs but can even lead to a net decrease in demand for renewable energy capacity due to the potential for implicit double counting (see Box #).</p>	 <p>Low</p>
<p><b>No renewable energy procurement or green-energy premium.</b> Some companies still do not pursue any form of renewable energy procurement or support.</p>	 <p>Nil</p>

### 3.2.2 Assessment criteria

In line with the guiding principles above, our evaluation of companies’ renewable electricity

procurement is based on the assessment criteria in Table 3 E. These criteria apply to real-economy companies and financial institutions alike.

**Table 3 E: Assessment criteria for procurement of renewable electricity (real-economy companies and financial institutions)**

## 3E Procurement of renewable electricity

### Transparency

-  The company provides thorough details on the pursued renewable energy constructs.
-  The company provides a moderate level of detail on the pursued renewable energy constructs.
-  The company provides very limited to no details on its pursued renewable energy supply constructs.

### Integrity

-  The company has installed on-site renewable energy capacity and storage; or monitors and watches [electricity/energy] consumption with renewable energy on a 24/7 basis  
<AND>  
These procurement options account for 100% of the company's electricity demand.
  -  The company pursues one or a combination of the following options:
    - On-site renewable energy capacity with or without and storage;
    - Monitoring and watching [electricity/energy] consumption with renewable energy on a 24/7 basis;
    - High-quality PPAs.
 <AND>  
These account for more than 90% but less than 95% of the company's electricity demand.
  -  The company uses a capacity expansion premium to cover the majority of its energy/electricity consumption  
<OR>  
The company uses one or a combination of the following options, but these do not account for the majority of the company's energy/electricity consumption:
    - On-site renewable energy capacity with or without storage;
    - Monitoring and watching electricity consumption with renewable energy on a 24/7 basis;
    - High-quality PPAs.
  -  The company uses some higher quality procurement options, but these account for a minor share of its consumption  
<OR>  
The company uses unbundled or bundled RECs;  
<OR>  
The company does not pursue any renewable energy procurement option.
  -  The company's renewable energy supply constructs are unclear, and an assessment is not feasible.
- The disclosure of emissions from the emissions scope is complete, but the level of detail does not facilitate a thorough understanding of emission sources.
- The emissions scope is not tracked and disclosed, or only to a limited extent.

4

# Climate contributions and offsetting

# 4.1 Responsibility for unabated emissions

## 4.1.1 Guiding principles

Most companies do not have the ability to immediately eliminate their entire GHG emissions footprint. While more and more companies are charting a pathway to complete decarbonisation and although far reaching reductions are possible and required in the next years, it will usually be many years or decades until they are able to entirely achieve this goal, even for the most ambitious companies. **Corporate climate leadership includes both setting ambitious targets for emission reductions in the company’s own value chain, as well as taking responsibility for unabated emissions in the meantime.** For some companies, taking responsibility for unabated emissions means making **climate contributions** to support climate change mitigation beyond

the company’s value chain without making a neutralisation claim, while for others it means **offsetting** and claiming to neutralise their emissions through carbon dioxide removals or emission reduction offset credits. Some companies pursue both approaches in parallel. Sections 4.2 and 4.3 explore key considerations for the credibility of these two approaches.

## 4.1.2 Assessment criteria

Our evaluation of companies’ responsibility for unabated emissions is dependent on the transparency and integrity of companies’ approaches to climate contributions and offsetting. The rating is based on the assessment criteria in Table 4 B. These criteria apply to real-economy companies and financial institutions alike.

Table 4 A: Assessment criteria for good practice climate contributions (real-economy companies and financial institutions)

4A Responsibility for unabated emissions	
<p><b>Transparency</b></p> <p> High  Moderate  Low</p> <p>The transparency score for <b>responsibility for unabated emissions</b> reflects the combined average transparency score for <b>climate contributions</b> (section 4.2 Table 4 B) and <b>offsetting claims today</b> (section 4.2 Table 4 D).</p> <p> Low</p> <p>The company does not provide any information on an approach to assume <b>responsibility for unabated emissions</b>, either through <b>climate contributions</b> (section 4.2 Table 4 B) or <b>offsetting claims today</b> (section 4.2 Table 4 D).</p>	<p><b>Integrity</b></p> <p> High  Moderate  Low  ?</p> <p>The integrity score for <b>responsibility for unabated emissions</b> reflects the combined average integrity score for <b>climate contributions</b> (section 4.2 Table 4 B) and <b>offsetting claims today</b> (section 4.2 Table 4 D).</p>

## 4.2 Climate contributions without a neutralisation claim

### 4.2.1 Guiding principles

In recognition of the limitations of offsetting and the need to ramp up financial support for climate action worldwide, some actors are moving away from the offsetting model to making a climate contribution without any neutralisation claim.

**We define climate contributions as the financial support provided by a company to support climate change action beyond the company's own value chain, without claiming to neutralise its own emissions.** A company can claim to contribute to climate change mitigation activities, without claiming ownership of the emission reduction outcomes and without subtracting associated reductions from their own GHG inventory or net-zero target. Climate contributions, which represent an alternative approach to offsetting, are a central feature of NewClimate Institute's Climate Responsibility approach (NewClimate Institute, 2020) and the WWF-BCG Climate Blueprint (WWF and BCG, 2020).

**An internal carbon price on emissions can inform the volume of financial support.** This way, climate contributions are linked to a company's responsibility for its own unabated emissions. The volume of financial contributions can serve as a key indicator of climate leadership. Ambitious companies could, for example, use the proceeds of an internal carbon price that is set at a high enough level to send a clear incentive signal for embarking on a 1.5°C-compatible decarbonisation trajectory.

**Companies can channel their climate contributions towards a wide range of activities.** Since they are not planning to claim to neutralise their emissions, companies making climate contributions are not tied to procuring carbon offset credits and enjoy far greater

flexibility in the type of activities they can support to advance global decarbonisation. This could include, for example, support for carbon removals through nature-based solutions, which does not offer sufficient guarantees of permanence to truly neutralise emissions (see section 4.2.1), but which is critical to addressing climate change and requires more financial support globally. Other examples include emerging technologies and measures for hard-to-abate sectors, where innovation and investment is needed to find new solutions. Uncertainties regarding the eventual emissions reductions delivered by more immature technologies and higher-risk investments may make them less attractive to project developers looking to generate offset credits, but a more suitable avenue for those channelling financial support in the form of climate contributions.

**Climate contributions without neutralisation claims can provide a transparent, constructive and ambitious approach** to take responsibility for unabated emissions:

- **More transparent:** Targets that are formulated independently from offsetting, without any netting-out of actual climate impacts, are more transparent and provide a clearer signal to decarbonise the company's own value chain.
- **More constructive:** Developing countries need more financial support to ramp up their mitigation action; voluntary action from companies is a vital channel of such support. A constructive environment is required, where this finance positively reinforces ambition raising, rather than one that provides perverse incentives to limit the ratcheting up of national climate commitments. In contrast to offsetting approaches, if the financial support from voluntary action results in emission reductions

that are owned by the actors supported and the host country they operate in, this action will not conflict with the host country’s GHG emission reduction target. Instead it can provide support for reaching and ratcheting up those targets.

- **More ambitious:** The contribution claim model is aligned with the concept of ratcheting ambition through a race to the top, a concept that underpins the Paris Agreement. If companies are free to self-determine their own ambition for their climate contributions – as countries do through Nationally Determined Contributions – this may result in a race to the top to demonstrate the highest ambition, without limits. This would mark a significant shift from the offsetting approach in which many companies race to the bottom

and exploit loopholes to deliver a fixed target at the lowest cost.

**Companies should disclose details on their climate contributions**, including the basis for determining the volume of their financial contributions, the amount that they contribute each year, the recipients and the anticipated or measured impacts. It is critical that communication around these climate contributions avoids any implication that they serve to offset the actual emissions of the company.

#### 4.2.2 Assessment criteria

In line with the guiding principles above, our evaluation of companies’ climate contributions is based on the assessment criteria in Table 4 B. These criteria apply to real-economy companies and financial institutions alike.

**Table 4 B: Assessment criteria for good practice climate contributions (real-economy companies and financial institutions)**

## 4B Climate contributions without neutralisation claim

### Transparency

- High

The company discloses information on its approach to climate contributions, including details on all of the following:

  - ✓ The basis for determining the volume of the financial contributions;
  - ✓ Total volume of finance (per year);
  - ✓ The project recipients;
  - ✓ Rationale for selection of project recipients;
  - ✓ Expected impact of support provision.
- Moderate

The company discloses some information on its approach to climate contributions, but without covering all of the good practice transparency criteria.
- Low

The company alludes to possible climate contributions but without providing sufficient clarity on whether the support is provided to claim neutralisation.
- N/A

The company does not assume responsibility for its unabated emissions through climate contributions without a neutralisation claim.

### Integrity

- High
  - ✓ The company assumes responsibility for its unabated emissions through climate contributions.
  - ✓ The company does not use any credits arising from the projects to claim the neutralisation of its own emissions.
  - ✓ The volume of finance is derived from, or at least equivalent to, an internal carbon tax across all scope 1, 2 and 3 emissions at a Paris-compatible price level.
- Moderate
  - ✓ The company assumes responsibility for its unabated emissions through climate contributions.
  - ✓ The company does not use any credits arising from the projects to claim the neutralisation of its own emissions.
  - ✗ However, the volume of finance is not derived from, or equivalent to, an internal carbon tax across all emissions at a Paris-compatible price level.
- Low

The company does not assume responsibility for its unabated emissions through climate contributions without a neutralisation claim.
- ?

The company provides insufficient information to assess the sufficiency of its climate contributions.

## 4.3 Offsetting claims

Some companies claim to offset their unabated emissions, by supporting the development of climate change mitigation projects through the procurement of carbon offset credits.

The credibility of a neutralisation claim is dependent on the specific carbon dioxide removal or emission reduction offsets procured.

### 4.3.1 Guiding principles

#### Definition of offsetting claims

Companies make an offsetting claim when they assert that unabated GHG emissions within their value chain are “neutralised”, “netted-out”, or “offset” through carbon dioxide removals or emission reduction activities outside of their value chain. The practice of offsetting has been afflicted by controversy and contention due to significant uncertainties in the real impact of offset credit use as well as the suitability of carbon dioxide removals for neutralising emissions. Accordingly, terminology for offsetting is highly sensitive and inconsistent. Many actors now avoid the term offsetting entirely; companies and initiatives more often refer to “neutralisation”, “netting-out”, “compensation”, “reducing the footprint”, while some actors use multiple terminologies to distinguish between offsetting in different circumstances and at different times. We assess all claims that unabated GHG emissions within the value chain are offset as offsetting claims, including all synonymous terminologies and project types.

#### Integrity of offsetting in the context of the Paris Agreement

The global governance framework of the Paris Agreement represents a different context from the Kyoto-era, under which most existing offsetting mechanisms and standards were developed.

The environmental integrity of an offsetting claim has always been dependent on various factors, including but not limited to additionality, permanence, avoidance of double counting, leakage, and the accuracy of quantified impacts

(Carbon Credit Quality Initiative, 2021). In addition to these long-established principles, several new factors are now of key importance to the integrity of an offsetting claim, since the coming into force of Paris Agreement:

- **Additionality in the context of safeguarding Paris ambition:** Under the global governance framework of the Paris Agreement, offset credits can only provide an appropriate guarantee of additionality if they are generated from high-hanging-fruit mitigation projects (see High-hanging fruit p.29).
- **Corresponding adjustments:** Corresponding adjustments on offset credit transactions are a minimum requirement to limit double counting of the emission reduction (see Corresponding adjustments p.29).
- **Net-zero compatibility:** Credits should only be procured from projects that are compatible with net-zero emission technology and infrastructure (see Net-zero compatibility p.31).
- **Carbon dioxide removals:** Carbon dioxide removal projects are rarely suitable for offsetting due to lack of permanence, scarcity and environmental damages (see Suitability of carbon dioxide removals for offsetting p.31).

These four key concepts are addressed in more detail in the following sub-sections.

We assess the integrity of offsetting claims that companies make today independently from offsetting plans that companies have for the future:

#### Integrity of offsetting claims today

The integrity of offsetting claims today is first and foremost hampered by the reality that there are currently no offset credits available from any markets that can meet all the criteria for robust environmental integrity (list above). Although the Paris Agreement is already in force, an accounting mechanism for corresponding adjustments is yet to be established under any international offsetting standard, though according to the decision of

COP26 in November 2021, this will be possible through the procurement of authorised A6.4ER credits in the future. There are also currently very few examples of existing offsetting projects that represent the high-hanging fruit of mitigation potential, given that offsetting markets to date have mainly focused on reaching the most cost-effective mitigation potential.

On account of the huge surplus of carbon offset credits available from existing projects and the low market prices for offset credits, among other factors, many available offset credits today may represent little-to-no meaningful climate impact. Emission reduction credits generated by existing and more easily accessible projects are generally sold at relatively low prices on both compliance and voluntary markets. Buyers paid an average USD 3/tCO<sub>2e</sub> for voluntary offset credits in 2018 (Donofrio et al., 2019), with the 99-percentile upper range outliers at a price of USD 16/tCO<sub>2e</sub>, substantially less than the carbon price range of USD 40-80/tCO<sub>2e</sub> which the High-Level Commission on Carbon Prices (2017) found to be consistent with the Paris Agreement 1.5°C temperature goal. Such prices cannot sufficiently incentivise companies to make operational changes to further reduce their own scope 1, 2 and 3 emissions.

A small niche of higher-quality existing offset projects that rely on carbon revenues may represent a moderate chance of meaningful climate impact, but none of these projects carry a complete guarantee of additional action that can be considered equivalent to emission reductions and few, if any, send a meaningful signal for decarbonisation of the buyer's own emissions footprint.

To date, the voluntary carbon market has been highly fragmented and unregulated. The credibility of offset procurement for carbon neutrality claims today must be assessed on a case-by-case basis, considering primarily whether the offsetting revenue can drive additional emission reductions, but also taking note of other potential loopholes or environmental integrity concerns.

## **Integrity of offsetting plans for the future**

Companies planning to offset their emissions in the future may not be able to identify specific projects today, but they can make an explicit statement of intent to restrict offsetting activity to high-hanging fruit projects with corresponding adjustments, along with other necessary conditions for environmental integrity.

It is also important that companies do not claim to meet a “net” emissions target by only offsetting their climate footprint in the year of the target, e.g. if the company were to claim it achieved a net-zero target for 2040 by offsetting its annual emissions in 2040, without taking equivalent responsibility for emissions in prior (or subsequent) years. This practice, which is a risk for all single-year targets, would likely mislead consumers, shareholders, regulators and other observers on the true impact of the company's overall contribution to the global stock of GHG emissions.

## **High-hanging fruit mitigation projects**

**Under the global governance framework of the Paris Agreement, offset credits can only provide an appropriate guarantee of additionality if they are generated from high-hanging-fruit mitigation projects.**

The high hanging fruit of mitigation potential refers to the technologies and measures to decarbonise emission sources that remain otherwise entirely inaccessible to host country governments in the near- and mid-term future, on account of extraordinary costs or other insurmountable barriers that cannot reasonably be overcome.

A key condition for determining the integrity of offset credits is the additionality of the emission reduction project; that is, the guarantee that credited emission reductions are additional to what could be achieved without the incentives of the offsetting programme. In historical offsetting mechanisms, additionality could be proven by showing that local legislation did not require the activity and that offsetting revenues could help overcome barriers which would otherwise prevent implementation. Since the coming into force of the Paris Agreement, the

concept of additionality needs to be redefined and should imply certainty that the project supported could not realistically have been implemented otherwise through unilateral ambition enhancements on the part of host-country governments.

The impact from offset credits cannot be considered additional if it presents credit-selling territories with a perverse incentive to limit the extent to which they ratchet up their own ambition during NDC revision cycles. The prospect of potential revenues from emission reduction credits presents a risk that, to maximise foreign investment, countries or subnational territories may limit their own national GHG reduction targets so that more of their mitigation potential can be tapped by international offsetting mechanisms.

To overcome this potential ambition pitfall, offsetting projects should be sufficiently ambitious that they avoid presenting any conflict with the host country's own ambition.

An increasing number of crediting standards, companies and countries already advocate for high-hanging fruit mitigation projects as an attractive or even preferable option for offsetting mechanisms in the future. It is important that all crediting standards recognise targeting truly inaccessible mitigation options as the only credible option today. No other proposed safeguards for pursuing offsetting mechanisms can reliably overcome the perverse incentive ambition pitfall for host countries.

**High-hanging fruit projects may incentivise further decarbonisation and lead to the identification of new solutions.**

High hanging fruit mitigation projects also partially safeguard against the risk of delayed decarbonisation action on the part of the buyer: a potential ambition pitfall of offsetting mechanisms in the context of the Paris Agreement, is that credit procurement can offer a cheap alternative to the decarbonisation of one's own emissions, which could lead to delayed action and a continuation of misaligned investments into new infrastructure that is not compatible with long-term decarbonisation

trajectories. High hanging fruit projects are more likely to mitigate against this risk to some extent, since they are likely to fetch a significantly higher price, sending a clearer signal to the buyer for further decarbonisation of their own emissions.

In addition to being the only credible option for post-2020 offsetting mechanisms to overcome potential ambition pitfalls, high hanging fruit mitigation projects can also be an attractive prospect for advancing on deeper decarbonisation trajectories at the global level, if this results in the identification and implementation of solutions to address harder-to-abate emission sources.

**The identification and development of high hanging fruit projects requires a radical shift of the offsetting market.**

A shift to high hanging fruit offsetting projects marks a significant transition. There are very few, if any, examples of existing credited projects that represent "high-hanging fruit" and could be considered truly additional in the context of safeguarding ambition in the Paris-era. Most emission reduction projects registered under crediting programmes to date have been developed in the context of cost-saving mechanisms under a pre-Paris governance framework in which not all countries had climate targets, rather than in the context of an ambition-raising mechanism that is aligned with the new post-Paris global climate governance framework. Accordingly, Shifting the focus towards high hanging fruit projects requires a radical transformation of the offsetting market. These "high-hanging fruit" projects are nascent worldwide, require specific know-how, and/or come at high cost (Warnecke et al., 2018).<sup>3</sup>

Project developers that look to operate in post-2020 offsetting mechanisms with high hanging fruit mitigation projects will need to adjust their market search to move from upscaling more accessible mitigation technologies, to the development and implementation of more innovative technologies for harder-to-abate emission sources. This will take considerable

<sup>3</sup> Specific examples include geothermal heat pumps to replace coal-fired heating plants in Mongolia and Net-Zero Energy Buildings in Colombia (Kachi et al., 2020; Nascimento et al., 2020).

time and resources to develop. Moreover, the scope of technologies and measures that would count as high-hanging fruits will be a gradually decreasing niche of activities, as countries' ambition and capabilities increase over the years.

On these considerations, it seems unlikely that high hanging fruit mitigation projects can serve the mass demand for offsets that some analysts have forecast for the coming decades, and which some companies currently plan for. Rather, if offsetting mechanisms are to be implemented in a credible way that safeguards against ambition pitfalls, offsets can only play an ever increasingly niche role in companies' and nations' climate change mitigation strategies.

**More accessible mitigation projects and nature-based solutions should still be supported without neutralisation claims.**

Although many existing carbon offset projects represent relatively low-hanging fruit and come at low costs, they may still be attractive to support, either to support other actors to implement their climate targets or on account of the associated sustainable development benefits. However, support providers should re-consider whether an offsetting claim is appropriate in cases where the climate impact is uncertain, or whether a climate contribution without a neutralisation claim may be more credible (see section 4.2).

## Corresponding adjustments

**Corresponding adjustments on offset credit transactions are a minimum requirement to limit double counting of the emission reduction.**

A corresponding adjustment requires that the country hosting an activity is required to make adjustments to their GHG emissions inventory to account for the volume of internationally transferred mitigation outcomes. Corresponding adjustments help ensure that the same emission reduction cannot be used towards multiple purposes, such as the national target of the project host country (referred to as "Nationally Determined Contribution", or NDC, under the Paris Agreement) as well as the NDC of another country, or in support of a

corporate's climate claim or target. While this is an intuitive concept, it is not yet a standard facilitated practice for any offsetting standards.

Under the rules for Article 6 of the Paris Agreement, agreed at COP26 in November 2021, corresponding adjustments are required for the transaction of any authorised A6.4ERs for any purpose. Given the potential complexities of establishing a functional system for corresponding adjustments, it remains unclear whether the voluntary offsetting standards will also introduce systems for corresponding adjustments, or if they will align and integrate with the Article 6.4 project registry.

Some offset providers and companies continue to reject the concept of corresponding adjustments and claim that this should not be required for companies purchasing voluntary offsets. More ambitious standards and companies will view corresponding adjustments as a minimum requirement.

This accounting adjustment alone does not guarantee the environmental integrity of an offset credit, but is a minimum requirement to uphold integrity in combination with the following criteria.

## Net-zero compatibility

**Credits should only be procured from projects that are compatible with net-zero emission technology and infrastructure.**

To support the objectives of the Paris Agreement, financial support must be channelled to the identification and scaling of long-term solutions. Investments in bridging technologies that represent marginal emission reductions, but which are not compatible in with zero emission technologies, may result in stranded assets, and can delay investment in the cleanest technologies.

For sectors that should be fully decarbonised before 2050, the supported technologies and measures must be compatible with a zero-emission sector. For harder-to-abate sectors, the supported technologies should be compatible with other best available or emerging decarbonisation technologies within those sectors.

This requirement is established in the Article 6 rules, although weak language may lead to deviating interpretations. Companies should take care of the projects from which their credits originate to ensure the environmental integrity of the credit and the credibility of their claims.

### **Suitability of carbon dioxide removals for offsetting claims**

**It can be good practice for companies to support the development of carbon dioxide removals (CDR) inside or outside their value chain in parallel to emission reductions.**

All scenarios consistent with a 1.5°C temperature increase include a major role for carbon dioxide removals, or “CDR” (Rogelj et al., 2018). This includes nature-based solutions for carbon sequestration in forests, soils, peatlands and mangroves, technological solutions such as bioenergy with carbon capture and storage (BECCS) and direct air carbon capture with storage (DACCS), and solutions with mineral storage. Finance is needed to scale up carbon dioxide removal efforts, and corporates could play a key role. It is more appropriate for corporates to channel support for carbon dioxide removals through climate contributions without neutralisation claims.

**It may be credible for companies to claim to neutralise their emissions under the specific conditions that they only offset residual emissions from hard-to-abate emission sources with carbon dioxide removals that have a high likelihood of sufficient permanence. Scarce potential and environmental damages mean that CDR measures cannot be considered a credible neutralisation of unabated emissions that could be feasibly reduced.**

Credible neutralisation of individual companies’ GHG emissions through financing carbon dioxide removal initiatives must focus on storage options that provide a sufficient guarantee of **permanence**, and are not significantly constrained by technical or physical limitations on the storage **potential**. Credibility also depends the **source of emissions** that the corporate intends to offset.

**CDR permanence:** The permanence of a CDR outcome refers to the degree of certainty that

the sequestered carbon will not be released at a later point in time. The permanence of different technologies depends on where in the earth’s system the carbon is sequestered. Sequestration in the lithosphere (such as injection into depleted fossil fuel reservoirs and aquifers or mineralisation into rocks) and in the hydrosphere (storage in deep oceans) have a more robust (and thus longer) degree of permanence compared to the biosphere (such as in trees or soils) due to its vulnerability to natural and anthropogenic disturbances. The release of previously sequestered carbon negates any accrued benefits of the sequestration. The release of previously sequestered carbon negates any benefits of the sequestration: at the point at which the carbon dioxide is released, the atmospheric concentration of carbon dioxide is restored to the same value that it would have been had the CDR activity never taken place. If non-permanent removals are used to neutralise emissions, the global CO<sub>2</sub> concentration will increase as a result (Jeffery et al., 2020). A sufficient guarantee of permanence requires a high likelihood that the captured carbon will remain stored over a timeframe of centuries to millennia. Significant reliance on measures that have a reasonable likelihood of releasing captured carbon over a timeframe of decades present a risk of materially increasing atmospheric carbon concentrations either this century or in the next.

**Scarcity of CDR potential:** The maximum potential of most carbon dioxide removal measures is technically limited, and further restricted by environmental constraints. Due to issues such as land requirements, high water consumption, high energy consumption, land degradation and pollution, among other environmental costs, carbon dioxide removal technologies can only be scaled up so far without significantly endangering sustainable development goals including food security. The scarcity of carbon dioxide removal measures is an important consideration when evaluating net-zero claims at the level of individual actors. Robust future use of scarce carbon dioxide removal options must be consistent with achieving net-zero and eventually net-negative emissions at the global level, which is required

to avoid the most damaging effects of climate change over the coming decades. To align with 1.5°C compatible pathways at the global level, some sectors with the technical ability to fully decarbonise will need to reach zero emissions, while carbon dioxide removals are likely needed to balance out the residual emissions from other hard-to-abate sectors. Any allocation of rights of ownership to scarce carbon dioxide removals will require international oversight as well as detailed (and likely highly complex) considerations of fairness and appropriate use to ensure efficient and effective efforts to contain and then reduce the atmospheric stock of emissions. It is not appropriate for companies today to make climate pledges which assume they will have the right to use scarce CDR outcomes to offset their own emissions decades in the future (or the financial resources to pay for these). If specific companies – for example in the energy industries – claim ownership of scarce carbon dioxide removals now or for a time in the future, then it will not be possible for those removals to balance out residual emissions in hard-to-abate sectors, and it will not be possible to reach net-zero emissions at the economy-wide level. We consider the technical potential of CDR measures considering environmental constraints, since these potentials cannot be exceeded without causing significant environmental damages and major conflicts with other resource demands. We consider the scarcity of technical potential against the understanding that 1.5 °C compatible pathways may require carbon dioxide removals of up to approximately 20 GtCO<sub>2e</sub>-yr by 2050 (Rogelj et al., 2018), to balance out residual emissions from hard-to-abate sectors and go beyond to overall net-negative emissions thereafter.

**Source of emissions to offset:** The credibility of a neutralisation claim partly depends on whether removals are used to balance out residual emissions from hard-to-abate emission sources where no known feasible options remain for further decarbonisation, or against unabated emissions for which further emission reductions are technically feasible. CDR technologies and measures all entail some degree of uncertainty regarding permanence, scarcity and environmental damages. For

residual emissions, CDR measures may be the only option available. However, for unabated emissions, CDR measures with uncertainties and environmental costs are not a credible equivalent alternative.

Table 4 C gives an overview of the suitability of CDR measures and technologies for neutralisation claims, in line with these principles, according to best available information in 2021.

**Table 4 C: Overview of the factors affecting suitability of CDR technologies for neutralising GHG emissions**

Assessment of specific CDR measures and technologies (according to best available information in 2021)

**Approach**

**Factors affecting suitability for offsetting**

		Scarcity in terms of additional potential <sup>(A)</sup> (GtCO <sub>2</sub> e-yr)			Environmental constraints	Displacement of emissions
		Likely permanence	Total technical potential	Environmentally constrained potential		
<p><b>CDR measures with mineral storage</b> have a reasonable likelihood to meet the criteria of permanence and additional potential to be considered a credible neutralisation of residual emissions from hard-to-abate emission sources. Uncertainties on the environmental limitations mean that the credibility of claiming the neutralisation of other unabated emissions is contentious.</p>	Enhanced weathering	Centuries to millennia	Likely vast 4-95 (Lenton, 2014; Taylor et al., 2015; Strefler et al., 2018)	Finite but possibly moderate 2-4 (Fuss et al., 2018)	Loss of habitats, water and air pollution from rock mining.	No issue
	Mineral carbonation	Centuries to millennia	Likely vast 8,200-34,700 GtCO <sub>2</sub> e cumulative (Kelemen et al., 2019)	Unknown, likely vast	High-water requirements; induced seismicity; groundwater contamination.	No issue
<p>For BECCS and DACCS with underground storage, high storage permanence is possible, although uncertainty on the risk of leaks remains. The limited additional potential of these measures, as well as the considerable environmental concerns and energy system inefficiencies, mean that these measures are not a reasonable equivalent alternative to emission reductions for unabated emissions when further emission reductions are feasible.</p>	Bioenergy with carbon capture and storage (BECCS)	Theoretically centuries to millennia, (uncertain)	Finite and possibly scarce 0.4-11.3 (Roe et al., 2019)	Finite and possibly scarce 0.5-5 (Fuss et al., 2018)	Land scarcity; monoculture affecting biodiversity and soil health; very high-water requirements.	No issue
	Direct air carbon capture and storage (DACCS)	Theoretically centuries to millennia, (uncertain)	Likely vast 5-40 (Fuss et al., 2018)	Finite and possibly scarce 0.5-5 (Fuss et al., 2018)	High water and energy requirements; pollution from by-products.	No issue
<p><b>CDR measures based on biological capture and storage</b> do not have the necessary degree of permanence, nor the additional potential, to be credibly considered an equivalent to emission reductions. These measures are also vulnerable to the displacement of emissions to other locations.</p>	Soil carbon sequestration	Years to decades	Finite and possibly scarce 0.3-6.8 (Roe et al., 2019)	Finite and possibly scarce 0.9-1.9 (Hepburn et al., 2019)	Soil saturation; land scarcity.	Vulnerable
	Biochar	Decades to centuries	Finite and possibly scarce 0.03-6.6 (de Coninck et al., 2018)	Finite and possibly scarce 0.3-2 (Fuss et al., 2018)	Plant resilience; ecosystem albedo; land degradation; loss of habitat.	Vulnerable
	Afforestation & reforestation (AR)	Years to decades	Finite and possibly scarce 0.5-10.1 (Roe et al., 2019)	Finite and possibly scarce 0.5-3.6 (Fuss et al., 2018)	Land availability; food security.	Vulnerable

## Relevance of Article 6 mechanisms for voluntary markets

The rules for the use of Article 6 of the Paris Agreement—agreed at COP26 in November 2021—establish a mechanism for the issuance of authorised emission reduction credits (A6.4ERs) that can be transferred for international mitigation purposes, including the voluntary offset credit procurement of individual companies. The agreed rules governing Article 6.4 are important because they represent the first and only internationally agreed standard for carbon trading in the Paris era, with a framework that can in theory be used to ensure environmental integrity and credible neutralisation claims. For this reason, the use of authorised A6.4ERs may represent a credible option for companies making offsetting claims through emission reductions or carbon dioxide removals outside of their own value chains.

However, the use of authorised A6.4ERs alone will not be sufficient to predetermine environmental integrity. Although the agreed rules may lead to the establishment of a framework that could be used to develop projects with robust environmental integrity, the rules also include loopholes as well as weak language on important issues. These loopholes can be used – and the weak language can be interpreted – in ways that could completely undermine the integrity of transactions and lead to an increase in emissions. The credibility of companies' offsetting claims will still depend on the specific credits that they accept, the projects that they come from, and the procedure for accounting the transaction.

### 4.3.2 Assessment criteria

In line with the guiding principles of the previous sections, the evaluation of companies' offsetting claims today and their plans for the future are based on the assessment criteria in Table 4 D and Table 4 E, respectively. These criteria apply to real-economy companies and financial institutions alike.

**Table 4 D: Assessment criteria for neutralisation claims in the present (real-economy companies and financial institutions)**

## 4D Offsetting claims today

### Transparency

**High**

The company claims the neutralisation of its emissions with carbon dioxide removal or emission reduction offsets, and provides explicit and clear details on all of the following:

- ✓ Volume of carbon dioxide removal and emission reduction offsets.
- ✓ The specific projects from which any carbon dioxide removal or emission reduction offsets are procured and timing of the project activity.
- ✓ Credit prices paid.
- ✓ The dependence on emission reduction or carbon dioxide removal offsets is presented prominently alongside the claim as a clear disclaimer.
- ✓ The neutralisation claim applies to all emission scopes to avoid misleading statements.

**Moderate**

The company claims the neutralisation of its emissions with carbon dioxide removal or emission reduction offsets, and provides explicit and clear details on all of the following:

- ✓ Volume of procured offset credits.
- ✓ The specific projects from which any offset credits are procured.
- ✓ The neutralisation claim applies to all emission scopes, or for neutralisation claims that cover only selected emission scopes, the formulation of the claim is clear and without potential to mislead.

**Low**

It is not clear whether the company claims the neutralisation of any emissions today. <OR>

The company claims the neutralisation of its emissions

- ✗ Without providing details on the volume of procured offset credits, and or
- ✗ without providing details on the specific projects from which those credits are procured.
- ✗ Covering only selected emission scopes with a claim that has the potential to mislead.

**?**

The company does not claim the neutralisation of any emissions today.

### Integrity

**High**

Projects are assessed individually on a case-by-case basis to determine the credibility of the neutralisation claim. The assessment considers primarily whether achieving the emission reductions depend on the offsetting revenue, but also takes note of other potential loopholes or environmental integrity concerns.

**N/A**

The company does not claim the neutralisation of any emissions today.

**Table 4 E: Assessment criteria for neutralisation claims planned for the future (real-economy companies and financial institutions)**

## 4E Neutralisation plans for the future

*If the company sets out different offset plans for its short-, medium- and long-term targets, the transparency and integrity ratings will reflect a combined average of the rating of those different approaches.*

### Transparency

**High**

The company plans to claim the neutralisation of its emissions with carbon dioxide removal or emission reduction offsets, and all the following criteria are met:

- ✓ Plans for emission reduction or carbon dioxide removal offsets are presented prominently alongside pledges as a clear disclaimer.
- ✓ The company discloses the (maximum) proportion of its emissions that it will claim neutralisation for in the future.
- ✓ The company sets out details on the type of projects it will support and the credits it will procure, or sets out clear principles for how it will make these decisions in the future. <OR>

**Moderate**

The company will not use carbon dioxide removals or emission reduction offsets to neutralise emissions for their targets.

The company plans to claim the neutralisation of its emissions with carbon dioxide removal or emission reduction offsets, and at least one of the good practice transparency criteria is met.

**Low**

The company is not clear about its plans for neutralisation of its emissions, or none of the good practice transparency criteria are met.

### Integrity

**High**

The company explicitly commits to procure only credits equivalent to a maximum of 5% of its 2019 emissions, that comply with the following criteria:

- ✓ The transactions are subject to corresponding adjustments.
- ✓ Projects are additional in the context of safeguarding Paris ambition (high hanging fruits).
- ✓ Projects are compatible with net-zero emission technology and infrastructure.

In the case of credits procured from carbon dioxide removal projects, all the following criteria are required in addition to the previous criteria:

- ✓ Credits will be used only to neutralise residual emissions from hard-to-abate emission sources.
- ✓ Carbon dioxide removals will have a high likelihood of high permanence.
- ✓ The specific means of carbon dioxide removal and storage is not “scarce” and not associated with high environmental costs. <OR>

The company will not use carbon dioxide removals or emission reduction offsets to neutralise emissions for their targets.

**Moderate**

The company explicitly commits to procure credits equivalent to a maximum of 10% of its 2019 emissions, from carbon dioxide removal projects with the following criteria:

- ✓ The transactions are subject to corresponding adjustments.
- ✓ Projects are additional in the context of safeguarding Paris ambition (high hanging fruits).
- ✓ Credits are used only to neutralise residual emissions from hard-to-abate emission sources.
- ✓ Carbon dioxide removals have a high likelihood of high permanence; but
- ✗ The means of carbon dioxide removal and storage is “scarce”, <OR>
- ✗ associated with high environmental costs.

**Low**

The company plans to claim the neutralisation of residual emissions without meeting all the above criteria. This includes, for example:

- ✗ Planning to claim the neutralisation of emissions with projects that do not constitute high hanging fruit.
- ✗ Planning to neutralise residual emissions with carbon dioxide removals that do not carry a high likelihood of permanence, or
- ✗ Planning to neutralise unabated emissions that could feasibly be further reduced with any carbon dioxide removal measures.

**?**

The company is not clear about its plans for neutralisation of emissions.

# Glossary and abbreviations

<b>Additional potential (of CDR)</b>	See “Scarcity (of CDR)”
<b>BEV</b>	Battery electric vehicles
<b>Biological capture and storage</b>	See “Nature based solutions”
<b>CCS</b>	Carbon Capture and Storage
<b>CCU</b>	Carbon Capture and Utilisation
<b>Climate contribution</b>	We define climate contributions as the financial support provided by a company to support climate change action beyond the company’s own value chain, without claiming the neutralisation of its own emissions in return.
<b>Carbon dioxide removals (CDR)</b>	All scenarios consistent with a 1.5°C temperature increase include a major role for carbon dioxide removals (Rogelj et al., 2018). This includes nature-based solutions for carbon sequestration in forests, soils, peatlands and mangroves, technological solutions such as BECCS and DACCS with underground storage, and solutions with mineral storage.
<b>Carbon offset credit</b>	A carbon offset credit is a certified unit of a reduction of GHG emissions, or a removal of carbon dioxide (see Carbon dioxide removals), which is used to balance out GHG emissions elsewhere. The practice of offsetting is often contentious (see section 4.1.2).
<b>CDM</b>	Clean Development Mechanism
<b>CDP</b>	Formerly the Carbon Disclosure Project: Many companies report emissions as well as other details of their climate strategies to CDP. CDP provide companies with a certified rating of their level of climate transparency, which is often used in company’s marketing materials.
<b>CEO</b>	Chief executive officer
<b>CH<sub>4</sub></b>	Methane
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>CPLC</b>	Carbon Pricing Leadership Coalition
<b>CSR</b>	Corporate social responsibility
<b>DACCS</b>	Direct Air Carbon Capture and Storage, see also “Carbon dioxide removals (CDR)”
<b>DRI</b>	Direct reduced iron
<b>EAD</b>	Exposure at default
<b>Engagement policy</b>	Engagement policy formulates the financial institution’s approach to stewardship vis-à-vis investee companies, borrowers, or clients with the objective of maximizing assets’ economic, social, and/or environmental value over a certain time frame.
<b>ESG</b>	Environmental Social Governance
<b>ESR</b>	Environment and Social Risk
<b>ETF</b>	Exchange Traded Fund
<b>EU</b>	European Union
<b>EV</b>	Electric vehicle
<b>Exclusion policy</b>	Exclusion policy formulates the financial institution’s approach and criteria applied to restrict the provision of financial services to companies or clients exposed to harmful activities.
<b>GHG Protocol</b>	The GHG Protocol is an initiative driven by the World Resources Institute and World Business Council for Sustainable Development, that provides international guidance and standards for GHG emissions accounting.
<b>GHG</b>	Greenhouse gas emissions
<b>GRESB</b>	Global Real Estate Sustainability Benchmark
<b>Guarantees of origin (GOs)</b>	Other terminology for Renewable Energy Certificates (REC), see “Renewable Energy Certificates (REC)”
<b>High-hanging fruit</b>	The high-hanging fruit of mitigation potential refers to the technologies and measures to decarbonise emission sources that remain otherwise entirely inaccessible to host country governments in the near- and mid-term future, on account of high costs or other insurmountable barriers that cannot reasonably be overcome.

<b>HVO</b>	Hydrotreated vegetable oil
<b>IATA</b>	International Air Transport Association
<b>IEA</b>	International Energy Agency
<b>ILO</b>	International Labor Organization
<b>Insetting</b>	“Insetting” is a business-driven concept used by a limited number of actors with no universally accepted definition. Insetting is often described as offsetting within the value chain. The approach can lead to low credibility GHG emission offsetting claims and presents a significant risk of double counting the same emission reductions (see Box A4 of the methodology, Annex I).
<b>Integrity (rating)</b>	We assess the transparency and integrity of companies’ climate pledges. Integrity, in this context, is a measure of the quality, credibility and comprehensiveness of a company’s approaches towards the various elements of corporate climate responsibility.
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>LEV</b>	Low-emission vehicles
<b>LNG</b>	Liquefied natural gas
<b>Location-based method (for scope 2 emissions accounting)</b>	The location-based method for scope 2 emissions accounting reflects the average emission intensity of the electricity grid from which the consumer’s energy is delivered.
<b>Market-based method (for scope 2 emissions accounting)</b>	The market-based method for scope 2 emissions accounting reflects the emissions from electricity generation specifically procured by the consumer (which may not reflect the electricity they actually consume from a grid that features multiple buyers and sellers). It derives emission factors from contractual renewable electricity procurement instruments.
<b>Nationally determined contributions (NDCs)</b>	Nationally determined contributions (NDCs) are the pledges made by national governments to the United Nations Framework Convention on Climate Change to mitigate climate change. The Paris Agreement requires all Parties to submit and regularly update their NDCs to represent their possible highest level of ambition. Recognising the insufficiency of climate change mitigation commitments in existing NDCs, the Glasgow Pact from COP26 urged all Parties to update their NDCs again ahead of COP27.
<b>Nature-based solutions</b>	Nature-based solutions refer to measures for carbon dioxide removal that involve biological carbon capture and storage in natural ecosystems, such as soils, forests, peatland and mangroves.
<b>Neutralisation</b>	Neutralisation of emissions is usually a term that is synonymous with offsetting and refers to the balancing out of emissions released into the atmosphere with the avoidance, or removal from the atmosphere, of an equivalent volume of emissions elsewhere. Many actors now avoid the term offsetting entirely; companies and initiatives more often refer to “neutralisation”, “netting-out”, “compensation”, “reducing the footprint”, while some actors use multiple terminologies to distinguish between offsetting in different circumstances and at different times. We define all claims that unabated GHG emissions within the value chain are offset as offsetting claims, including all synonymous terminologies and all project types.
<b>Non-GHG climate forcers</b>	Non-GHG climate forcers include the emission of gases and aerosols, and processes that change cloud abundance, leading to radiative forcing. Radiative forcing is a change in the balance of radiation in the atmosphere, which contributes to global warming. For example, the non-GHG climate forcers are estimated to increase the climate impact of GHG emissions from the aviation industry by a factor of approximately 3.(Atmosfair, 2016)
<b>NZBA</b>	Net Zero Banking Alliance
<b>N<sub>2</sub>O</b>	Nitrous oxide
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>Offsetting</b>	See carbon offset.
<b>PACTA</b>	Paris Agreement Capital Transition Assessment
<b>Partnership for Carbon Accounting Financials (PCAF)</b>	PCAF is a global partnership of financial institutions that developed an accounting framework for tracking and disclosing GHG emissions.
<b>Permanence (of CDR)</b>	The permanence of a CDR outcome refers to the timescale and degree to which sequestered carbon remains stored and not released into the atmosphere.
<b>PHEV</b>	Plug-in hybrid electric vehicle
<b>Power purchase agreement (PPA)</b>	A PPA is a long-term contract between an electricity provider and an electricity consumer,

usually spanning 10-20 years. The consumer agrees to purchase a certain amount of electricity from a specific asset under a pre-determined pricing arrangement. PPAs are generally signed with new renewable energy installations and form part of the project investment decision (NewClimate Institute and Data-Driven EnviroLab, 2020). PPAs can also be signed for existing installations, in which case it is less likely the PPA results in additional renewable electricity capacity. However, it may be that existing installations would cease operations if the operator cannot sign a new PPA.

<b>PV</b>	Photovoltaics
<b>R&amp;D</b>	Research & Development
<b>REDD+</b>	Reducing Emissions from Deforestation and Forest Degradation and the Role of Conservation, Sustainable Management of Forests and Enhancement of Forest Carbon Stocks in Developing Countries
<b>Renewable energy certificate (REC)</b>	Renewable Energy Certificates (RECs) are also known under various names, such as Guarantees of Origin (GOs) or Energy Attribute Certificates (EACs). RECs can be bundled or unbundled with the electricity that a company consumes:
<i>Unbundled RECs</i>	The consumer purchases RECs from a third party, separately from their procurement of electricity from another supplier.
<i>Bundled RECs – third-party generated</i>	The consumer purchases electricity and RECs from the same supplier, but this supplier has procured the RECs from a third party. In this situation, the supplier may sell electricity generated using fossil fuels but market it as 'low-carbon' electricity by bundling an equivalent volume of RECs into the sale.
<i>Bundled RECs – supplier generated</i>	The consumer purchases renewable electricity and associated RECs from the same supplier.
<b>Residual emissions</b>	Residual emissions are the remaining GHG emissions from hard-to-abate emission sources where no known feasible options remain for further decarbonisation. (See also unabated emissions)
<b>Scarcity (of CDR)</b>	The maximum potential of most carbon dioxide removal measures is technically limited, and even further restricted by environmental constraints. Due to issues such as land requirements, high water consumption, high energy consumption, land degradation and pollution, among other environmental costs, carbon dioxide removal technologies can only be scaled-up so far without significantly endangering sustainable development goals, including food security. The scarcity of carbon dioxide removals measures – in terms of their maximum absolute or annual technical potential – is an important consideration when evaluating the feasibility of net-zero claims at the level of individual actors. Robust future use of scarce carbon dioxide removal options must be consistent with achieving net-zero and eventually net-negative emissions at the global level, which is required to avoid the most damaging effects of climate change over the coming decades.
<b>Science Based Targets initiative (SBTi)</b>	SBTi reviews and certifies the climate targets of companies who join the initiative as members. Companies' climate targets are certified as 1.5°C or 2°C compatible if they align with SBTi's own methodology and benchmarks.
<b>Scope (of GHG emissions)</b>	The GHG Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes' (WBCSD and WRI, 2004).
<i>Scope 1 emissions</i>	Scope 1 emissions are direct emissions from owned or controlled sources.
<i>Scope 2 emissions</i>	Scope 2 emissions are indirect emissions from the generation of purchased energy (see also location-based method and market-based method).
<i>Scope 3 emissions</i>	Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (WRI and WBCSD, 2013).
<i>Upstream scope 3 emission sources</i>	Upstream emissions are indirect GHG emissions related to purchased or acquired goods and services (WRI and WBCSD, 2013).
<i>Downstream scope 3 emission sources</i>	Downstream emissions are indirect GHG emissions related to sold goods and services (WRI and WBCSD, 2013).
<i>Normal scope 3 emission sources</i>	The GHG Protocol's Scope 3 Standard identifies 15 distinct reporting categories for scope 3 emission sources, and requires companies to quantify and report scope 3 emissions from each category (WRI and WBCSD, 2013).
<i>Optional scope 3 emission sources (indirect use-phase emissions)</i>	Indirect use-phase emissions are described by the GHG Protocol Scope 3 Standard (WRI and WBCSD, 2013) as an optional reporting component. In contrast to direct use-phase emissions from products, such as the energy consumption of vehicles and appliances, indirect use-phase emissions refer to the emissions that occur indirectly from the use of a product. For example, apparel requires washing and drying; soaps and detergents are often used with heated water.

<b>Sustainable aviation fuels (SAF)</b>	Sustainable aviation fuels are aviation fuels derived from renewables or waste considering certain sustainability criteria.
<b>Transparency (rating)</b>	We assess the transparency and integrity of companies' climate pledges. Transparency ratings refer to the extent to which a company publicly discloses the information necessary to fully understand the integrity of that company's approaches towards the various elements of corporate climate responsibility.
<b>UN</b>	United Nations
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>Unabated emissions</b>	Unabated emissions are GHG emissions from emission sources for which further emission reductions are technically feasible at that point in time. (See also residual emissions)
<b>UNGP</b>	United Nations Guiding Principles on Business and Human Rights
<b>US</b>	United States
<b>Value chain emissions</b>	A company's full value chain emissions refers to the entirety of scope 1, scope 2, and scope 3 emissions.
<b>VCS</b>	Verified Carbon Standard
<b>ZEB</b>	Zero-emission building

# Data sources

## Public documentation

For our assessments, we only consider documentation that is publicly available, for two reasons. Firstly, we consider that when companies make public announcements on claims to climate leadership, they have a responsibility to make available to the same public audience the information that would be required to understand and appraise those claims. Secondly, we do not consider that there is any accountable commitment associated with any targets or plans that are not made public.

## CDP reporting

Many companies report on aspects of their climate-related targets and strategies through annual disclosures to CDP. Companies' CDP responses are available either through the purchase of data from CDP, through registration on the CDP website (with limitations), or from the website of the specific companies in the case that companies choose to publish those responses. In line with our position on only assessing publicly available information (see above), we do not consider information disclosed in a company's CDP response unless that document is made publicly available on the company's website without a registration- or pay-wall.

Even in the case that a company's CDP response is made publicly available on its website, we do not consider this to be a transparent means of communication if the information in that CDP response is inconsistent with, or undermines, the information presented in the company's main public-facing documentation. Given the technical nature of CDP response documents and their limited accessibility for a non-expert audience, we also do not consider it transparent practice if specific information that is fundamental for an understanding of the meaning or integrity of a company's climate strategy can only be found in those documents.

# References

- Atmosfair (2016) Atmosfair Flight Emissions Calculator. Berlin: Atmosfair gGmbH. Available at: <https://www.atmosfair.de/wp-content/uploads/atmosfair-flight-emissions-calculator-englisch-1.pdf>.
- Avelar, L. and Boer, Y. de (2021) Why 24/7 clean energy beats carbon offsetting, World Economic Forum. Available at: <https://www.weforum.org/agenda/2021/11/no-more-greenwashing-24-7-clean-energy/> (Accessed: 4 January 2022).
- Bjørn, A. et al. (2022) 'Renewable energy certificates threaten the integrity of corporate science-based targets', *Nature Climate Change*, 12, pp. 539–546. doi: <https://doi.org/10.1038/s41558-022-01379-5>.
- Boehm, S. et al. (2021) *State of Climate Action 2021: Systems Transformations Required to Limit Global Warming to 1.5°C*. Washington, DC: World Resources Institute. doi: <https://doi.org/10.46830/wri rpt.21.00048>.
- Carbon Credit Quality Initiative (2021) *The Carbon Credit Quality Initiative*. Available at: <https://carboncreditquality.org/> (Accessed: 20 January 2022).
- CAT (2020) *Paris Agreement Compatible Sectoral Benchmarks: Elaborating the decarbonisation roadmap*. Climate Action Tracker (Climate Analytics, NewClimate Institute). Available at: <https://climateactiontracker.org/publications/paris-agreement-benchmarks/>.
- CDP (2020) 'The time to green finance'. Available at: <https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/741/original/CDP-Financial-Services-Disclosure-Report-2020.pdf?1619537981>.
- de Coninck, H. et al. (2018) *Strengthening and Implementing the Global Response, Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change*. Available at: [https://www.ipcc.ch/site/assets/uploads/sites/2/2018/11/SR15\\_Chapter4\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2018/11/SR15_Chapter4_Low_Res.pdf).
- Dietz, S. et al. (2021) *TPI's methodology report: Management Quality and Carbon Performance (Version 4.0, November 2021)*. Transition Pathway Initiative (TPI). Available at: <https://www.transitionpathwayinitiative.org/publications/90.pdf?type=Publication> (Accessed: 13 January 2020).
- Donofrio, S. et al. (2019) 'State of the Voluntary Carbon Markets 2019'. Washington D.C: Ecosystem Marketplace. Available at: <https://www.ecosystemmarketplace.com/carbon-markets/>.
- Fuss, S. et al. (2018) 'Negative emissions—Part 2: Costs, potentials and side effects', *Environmental Research Letters*, 13(6), p. 063002. doi: 10.1088/1748-9326/aabf9f.
- GHG Protocol (2015) 'An amendment to the GHG Protocol Corporate Standard GHG Protocol Scope 2 Guidance'. World Resources Institute and World Business Council for Sustainable Development. Available at: [https://ghgprotocol.org/sites/default/files/Scope2\\_ExecSum\\_Final.pdf](https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf).
- Hepburn, C. et al. (2019) 'The technological and economic prospects for CO<sub>2</sub> utilization and removal', *Nature*, 575, pp. 87–97. doi: <https://doi.org/10.1038/s41586-019-1681-6>.
- High-Level Commission on Carbon Prices (2017) *Report of the High-Level Commission on Carbon Prices*. Washington D.C: Carbon Pricing Leadership Coalition. Available at: [https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/59244eed17bffc0ac256cf16/1495551740633/CarbonPricing\\_Final\\_May29.pdf](https://static1.squarespace.com/static/54ff9c5ce4b0a53deccfb4c/t/59244eed17bffc0ac256cf16/1495551740633/CarbonPricing_Final_May29.pdf).
- IEA (2021) *Net Zero by 2050: A Roadmap for the Global Energy Sector*. Paris, France: International Energy Agency, Paris, France. Available at: <https://www.iea.org/reports/net-zero-by-2050>.
- Jeffery, L. et al. (2020) *Options for supporting Carbon Dioxide Removal*. Cologne and Berlin: NewClimate Institute. Available at: [https://newclimate.org/wp-content/uploads/2020/07/Options-for-supporting-Carbon-Dioxide-Removal\\_July\\_2020.pdf](https://newclimate.org/wp-content/uploads/2020/07/Options-for-supporting-Carbon-Dioxide-Removal_July_2020.pdf).
- Kachi, A. et al. (2020) *Net-zero energy housing virtual Article 6 pilot*. Cologne and Berlin: NewClimate Institute. Available at: <https://newclimate.org/wp-content/uploads/2020/01/Colombia-Art-6-Virtual-Pilot-15-January-2020.pdf>.
- Kelemen, P. et al. (2019) 'An Overview of the Status and Challenges of CO<sub>2</sub> Storage in Minerals and Geological Formations', *Frontiers in Climate*. doi: <https://doi.org/10.3389/fclim.2019.00009>.
- Laplane, J. and van Loenen, L. (2021) 'Fair Finance Guide International Methodology 2021'. FairFinance International, Profundo. Available at: <https://fairfinanceguide.org/media/497246/ffg-policy-assessment-methodology-2021.pdf>.
- Lenton, T. M. (2014) 'The Global Potential for Carbon Dioxide Removal', in Harrison, R. and Hester, R. (eds) *Geoengineering of the Climate System*. Royal Society of Chemistry, pp. 52–79.
- Lütkehermöller, K. et al. (2020) *Unpacking the finance sector's investment commitments*. NewClimate Institute, Cologne and Berlin, Germany; and Utrecht University, Netherlands. Available at: <https://newclimate.org/2020/09/04/unpacking-the-finance-sectors-climate-related-investment-commitments/>.
- Nascimento, L. et al. (2020) *Renewable heating virtual Article 6 pilot - Ground source heat pumps in Khovd, Mongolia*. Available at: <https://newclimate.org/2020/01/29/renewable-heating-virtual-article-6-pilot-ground-source-heat-pumps-in-khovd-mongolia/> (Accessed: 18 June 2021).
- NewClimate Institute (2020) *Our climate responsibility approach - A new approach for organisations to take responsibility for their climate impact*. Cologne: NewClimate Institute. Available at: <https://newclimate.org/climate-responsibility>.

NewClimate Institute and Data-Driven EnviroLab (2020) Navigating the nuances of net-zero targets. Thomas Day, Silke Mooldijk and Takeshi Kuramochi (NewClimate Institute) and Angel Hsu, Zhi Yi Yeo, Amy Weinfurter, Yin Xi Tan, Ian French, Vasu Namdeo, Odele Tan, Sowmya Raghavan, Elwin Lim, and Ajay Nair (Data-Driven EnviroLab). Available at: <https://newclimate.org/2020/10/22/navigating-the-nuances-of-net-zero-targets/>.

Roe, S. et al. (2019) 'Contribution of the land sector to a 1.5 C world', Nature Climate Change, 9, pp. 817–828. doi: <https://doi.org/10.1038/s41558-019-0591-9>.

Rogelj, J. et al. (2018) 'Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development', in Masson-Delmotte, V. et al. (eds) Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change. Available at: [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15\\_Chapter2\\_Low\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter2_Low_Res.pdf).

SBTi (2021) SBTi Corporate Net-Zero Standard, Version 1.0. Science Based Targets Initiative (SBTi); CDP; United Nations Global Compact; World Resources Institute (WRI); World Wide Fund for Nature (WWF). Available at: <https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>.

Strefler, J. et al. (2018) 'Potential and costs of carbon dioxide removal by enhanced weathering of rocks', Environmental Research Letters, 13(3). doi: <https://doi.org/10.1088/1748-9326/aaa9c4>.

Taylor, L. et al. (2015) 'Enhanced weathering strategies for stabilizing climate and averting ocean acidification', Nature Climate Change, 6, pp. 402–406. doi: <https://doi.org/10.1038/nclimate2882>.

The Hague District Court (2021) Milieudefensie et al. v. Royal Dutch Shell Plc. (Judgment of 26 May 2021, court-issued English translation). Den Haag, Netherlands. Available at: [http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2021/20210526\\_8918\\_judgment-2.pdf](http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2021/20210526_8918_judgment-2.pdf).

UNFCCC (2021) Race to Zero Breakthroughs: Transforming Our Systems Together. A global challenge to accelerate sector breakthroughs for COP26 – and beyond. United Nations Framework Convention on Climate Change. Available at: <https://racezero.unfccc.int/wp-content/uploads/2021/02/Race-to-Zero-Breakthroughs-Transforming-Our-Systems-Together.pdf>.

Warnecke, C. et al. (2018) Opportunities and safeguards for ambition raising through Article 6: The perspective of countries transferring mitigation outcomes. Berlin: NewClimate Institute. Available at: <https://newclimate.org/resources/publications/opportunities-and-safeguards-for-ambition-raising-through-article-6>.

WBCSD and WRI (2004) The GHG Protocol Corporate Accounting and Reporting Standard. Geneva and New York: World Resources Institute and World Business Council for Sustainable Development. Available at: <https://ghgprotocol.org/corporate-standard>.

WRI and WBCSD (2011) Corporate Value Chain (Scope 3) Accounting and Reporting Standard: Supplement to the GHG Protocol Corporate Accounting and Reporting Standard. World Resources Institute and World Business Council for Sustainable Development. Available at: <https://ghgprotocol.org/standards/scope-3-standard>.

WRI and WBCSD (2013) Technical Guidance for Calculating Scope 3 Emissions. World Resources Institute, World Business Council for Sustainable Development. Available at: [http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Scope3\\_Calculation\\_Guidance\\_0.pdf](http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Scope3_Calculation_Guidance_0.pdf) (Accessed: 6 June 2019).

WWF and BCG (2020) Beyond Science-Based Targets: A Blueprint for Corporate Action on Climate and Nature. World Wide Fund For Nature, Gland, Switzerland and Boston Consulting Group, Boston MA, USA. Available at: <https://wwfint.awsassets.panda.org/downloads/beyond-science-based-targets-a-blueprint-for-corporate-action-on-climate-and-nature.pdf>.

**NewClimate - Institute for  
Climate Policy and Global  
Sustainability gGmbH**

Waidmarkt 11a

50676 Köln

Deutschland

Phone: +49 221 999 83 300

Email: [info@newclimate.org](mailto:info@newclimate.org)

Website: [www.newclimate.org](http://www.newclimate.org)

**NEW  
CLIMATE**  
INSTITUTE

