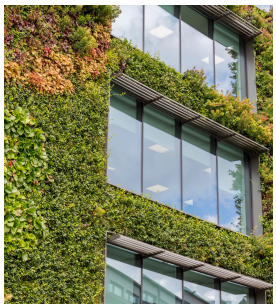
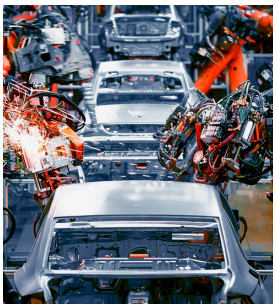
Climate Neutrality in Business


Ten recommendations for implementation

Nicolas Kreibich
Jens Teubler
Markus Kühlert
Nadine Braun
Victoria Brandemann

Zukunftsimpuls 20 | November 2021

Wuppertal Institut

Zukunftsimpuls 20 | November 2021

Publisher:

Wuppertal Institute for Climate, Environment and Energy
Döppersberg 19
42103 Wuppertal, Germany

www.wupperinst.org

Authors:

Nicolas Kreibich
E-mail: nico.kreibich@wupperinst.org

Jens Teubler

Markus Kühlert

Nadine Braun

Victoria Brandemann

Please cite this publication as follows:

Kreibich, N., Teubler, J., Kühlert, M., Braun, N., & Brandemann, V. (2021). Climate neutrality in business: Ten recommendations for implementation (Zukunftsimpuls no. 20). Wuppertal Institute for Climate, Environment and Energy.

This Zukunftsimpuls was originally published in German in August 2021.

The "Zukunftsimpulse" series provides theses, discussion papers, contributions, assessments, statements and research results related to current political debates. Up to and including Volume 10, the series was published under the title "Impulse zur Wachstumswende" (Impulses for a Turnaround in Growth).

Photo credit: Title page Getty Images

Wuppertal, November 2021

ISSN 2701-3200

Table of contents

Ten key messages

The increasing prevalence and implementation of climate neutrality or net zero targets by companies is in essence a welcome development. It is an expression of greater awareness that the climate crisis requires responsible and forward-looking action by companies, and that they are willing to take on this responsibility. However, neutrality targets can hide the fact that society in general and many companies in particular still face enormous challenges in overcoming the climate crisis. In most cases, there is a long and arduous path between formulating targets and achieving them, with the latter requiring the realisation of a wide range of measures. The Wuppertal Institute therefore proposes the following recommendations for setting and implementing net zero targets.

1 | The process of determining the company's own climate footprint should be based on robust, verified data and take into account the links in the value chain both upstream and downstream of the business.
2 | Net zero targets and progress towards their implementation should be reported transparently and allow for comparison.
3 | Investments in the business's own climate protection measures and in the upstream or downstream value chain should underpin net zero targets from the beginning.
4 | Measures taken to protect the climate should be prioritised in order to achieve the most effective, absolute and sustainable reduction of greenhouse gases possible.
5 | Measures to capture and store CO_2 and investments in negative emissions in the form of natural carbon sinks should only be employed where they serve to limit unavoidable emissions or where they can be implemented within the organisation's own boundaries.
6 | The option to finance offsetting projects should only be used to balance out emissions that cannot be reduced or avoided within the company's own processes. As a general principle, the share of emissions offset via these projects should decrease over time.
7 | The carbon credits purchased for the purpose of offsetting must be robust and have environmental integrity. They must not undermine the Paris Agreement or have negative social or environmental impacts.
8 | Carbon credits, which companies count towards the achievement of their own targets, should make an additional contribution and thus go beyond the pledges made by the various signatory states under the Paris Agreement with a view to bolstering the ambition mechanism set out in the agreement.
9 | Instead of investing in offsetting, in many cases it makes more sense to provide countries in the Global South with direct assistance in combatting climate change or to fund local climate protection initiatives.
10 | The term climate neutrality is helpful as a means of defining a company's targets and signalling its aspirations. Until climate neutrality is achieved by the company as a whole, this attribute can only be claimed in exceptional cases for individual products or services.

Introduction

Hardly a day goes by without a major company announcing its intention to achieve climate neutrality within a few years. This is a **welcome development** – not only is it an expression of the private sector's greater awareness of the climate crisis, it also shows that businesses are increasingly facing up to their responsibilities. Climate neutrality or net zero[1] targets give companies a way to communicate their climate protection efforts to the public and signal a fundamental willingness to take further action. As a result, they help to drive climate policy. Furthermore, there is potential for net zero targets to support consumers, investors and credit institutions in taking greater account of climate considerations in their decision-making. The sheer scale of this development is impressive: 482 major companies, each with an annual turnover of more than 1 billion US dollars, have already set themselves net zero targets. And they are being joined by new businesses almost every week. Together, these companies have an annual turnover of 16 trillion US dollars, which is more than the gross domestic product of China (Kreibich & Hermwille, 2021).

At the same time, however, this trend raises **many questions**. What exactly do these corporate net zero targets mean? Which parts of the company are included? Are emissions from other actors in the value chain also covered? Is the chosen target ambitious? How was the target set and verified? What proportion of the promised reduction can be attributed to the company's own efforts? A look at the research carried out into net zero targets shows that it is extremely difficult to answer these and other questions (see Box 1). While some companies aim to make a specific product carbon-neutral, others pursue the climate neutrality of their entire business operations, encompassing upstream and downstream links in the value chain. The strategies that lie behind the stated targets are often difficult for outsiders to understand.

Box 1: Status quo concerning net zero targets: lack of transparency and comparability

Recent analysis reveals numerous weaknesses in the net zero targets announced by companies. One problem that makes comparing the communicated targets difficult is the lack of uniformly applied definitions. That is because businesses do not usually disclose precisely what they mean by net zero, climate neutrality or carbon neutrality. The targets themselves and the strategies for achieving them are also highly inconsistent, differing in terms of their start and end points and often providing no, or only unclear, interim targets. Differences also exist with regard to the emission sources covered by the targets. For example, most businesses do not include their value chain, or only report on it to a limited extent. The role of offsetting, i.e. companies purchasing carbon credits and counting them towards their own targets, varies considerably, too. This also depends on how closely linked a company's business model is to greenhouse gas emissions: for businesses in the agricultural or aviation sectors, the use of offsets would currently appear to be the only realistic option to achieve climate neutrality. Overall, however, there are very few companies that explicitly exclude offsetting and often firms do not provide any information about this (see Kachi et al., 2020; Kreibich & Hermwille, 2021; Machnik et al., 2020).

The Paris Agreement, which has implications for the use of carbon credits and thus for **offsetting**, poses a further challenge in that it has fundamentally changed the parameters for offsetting. This is because, in the past, carbon credits were primarily obtained in those sectors of the economy and those regions that were not covered by

[1] The terms "climate-neutral", "net zero", "GHG-neutral" and "carbon-neutral" are largely used synonymously in public policy as well as in the corporate field. In the following, we will use the term "net zero" to cover all the different types of neutrality targets.

national climate protection goals (for example, in developing countries that had no reduction targets under the Kyoto Protocol) and could thus be credited in full against a company's own emissions. However, the Paris Agreement now requires all states to protect the climate, which is why, in the future, carbon credits will also be generated in sectors covered by climate protection goals. This calls into question the way offsetting has worked so far, because there will be an increased risk of double counting the effects of climate action. Exactly what role offsetting will play in the implementation of corporate net zero targets is currently unclear, partly because many companies do not provide any data on this. However, there is much to suggest that most businesses will use offsetting to implement their net zero targets, at least in the medium term.

As a consequence, there is a **lack of transparency and comparability** with respect to the net zero targets and the role that offsetting plays in their implementation. Various assessment platforms and indices, such as CDP or Capital, do already exist to provide consumers, investors and credit institutions with information to help them evaluate the climate activities undertaken by companies. That said, the assessment methods used differ greatly and are not generally transparent. Transparency and comparability are, however, key prerequisites for reviewing and exploiting the potential of pathways to climate protection in companies to help achieve national and international goals.

These shortcomings are further exacerbated by **multiple risks**. For one thing, it is now difficult to distinguish ambitious efforts to protect the climate from greenwashing activities. This is especially true if a net zero target is achieved primarily by means of carbon credits, where there is a risk of double counting. In addition, marketing climate-neutral products and services can also have a negative impact on the climate. For example, a rail journey for which the emissions are not offset could be seen by consumers as more damaging to the climate than a flight that is advertised as being climate-neutral. The fact that rail travel, despite the emissions it produces, contributes towards a sustainable transport infrastructure and is thus more climate-friendly is lost from view when focusing purely on climate impact calculations.

The concept of net zero targets is therefore **complex**. Net zero targets make things simpler by distilling the interaction of a wide range of processes into a simple formula. At the same time, however, this simplification can lead to the negative effects outlined above. The aim of this volume of *Zukunftsimpuls* is to identify potential solutions for avoiding these negative effects and to translate these into ten recommendations for action.

1. Robust underlying data

In order to pursue net zero targets, a company's own current climate footprint must be calculated to give a baseline for reductions in greenhouse gases (GHGs). These calculations also play an increasingly important role in the regulatory framework (see Box 2 on the changing parameters for sustainability reporting).

To ensure robust accounting, companies can refer to the Greenhouse Gas Protocol[2] and its principles:

- Relevance
- Completeness
- Consistency
- Transparency
- Accuracy

All activities that account for a large share of a company's own GHG emissions are considered **relevant**. As a rule, this includes at least the direct (Kyoto), on-site emissions (Scope 1) and the indirect emissions from purchased electricity, cooling and heating (Scope 2). However, emissions in the upstream and downstream value chain (Scope 3) can and should also be reported for relevant areas, even if these are not counted towards the net zero target. It is essential to ensure that a suitable base year has been chosen that represents typical company activities in recent years.

A **complete** GHG inventory also covers all relevant activities within the chosen organisational boundaries, which may include subsidiaries, participations and multiple locations. The control principle applied for this purpose (the GHG Protocol Corporate Accounting and Reporting Standard primarily distinguishes between operational and financial controls) should also be used later when calculating the impact of measures taken by the company to achieve its climate targets. Cut-offs that fall within the organisation's boundaries but are not reported (e.g. due to a lack of data) must be explicitly justified and should also be disclosed in the reporting on the neutrality target.

The principle of **consistency** is understood to mean the uniform application of methods, assumptions and calculations. Especially for reporting over longer periods of time, as is required for net zero targets, changes in methods and data should be justified and their implications taken into account when calculating effects. This may require the footprint figure for the base year and all the intervening years to be recalculated and re-reported several times over the time frame of the business's climate action plan. However, this also covers assumptions on corporate growth, which should not be applied to the (prior) targets without justification.[3]

Transparent reporting includes a description of the steps followed to calculate the organisation's GHG inventory. It should be readily understandable, justify decisions, document changes and refer to the methods and data used. Good reporting in this context is objective and complete and ensures comparability with other inventories.

An inventory can be considered **accurate** if the actual effects are neither significantly overestimated nor significantly underestimated. For this to be the case,

[2] The GHG Protocol Corporate Accounting and Reporting Standard is one of the established international standards for calculating company carbon footprints. Guidance and tools can be found at https://ghgprotocol.org.

[3] "Grandfathering" determines the emissions budget to which a sector, and thus a company in this sector, is entitled in each year of a climate action road map. Usually, the status quo in the base year is taken as the starting point (3% share of the budget in 2020 thus corresponds to 3% of the remaining budget in 2030). However, there are numerous alternative approaches that, for example, take account of the right to develop or the marginal costs of reduction measures (see also Knight, 2013).

as much physical data as possible – that is also as accurate as possible – must be available, and the most appropriate intensity factors must be used to determine the global warming potential. When using conversion factors, assumptions and supporting figures, care must be taken to ensure that they are up-to-date, relevant and plausible. For example, a company with high transport costs should use fuel prices that are accurate to the quarter or even to the month, while the average price over a year may suffice for low transport volumes.

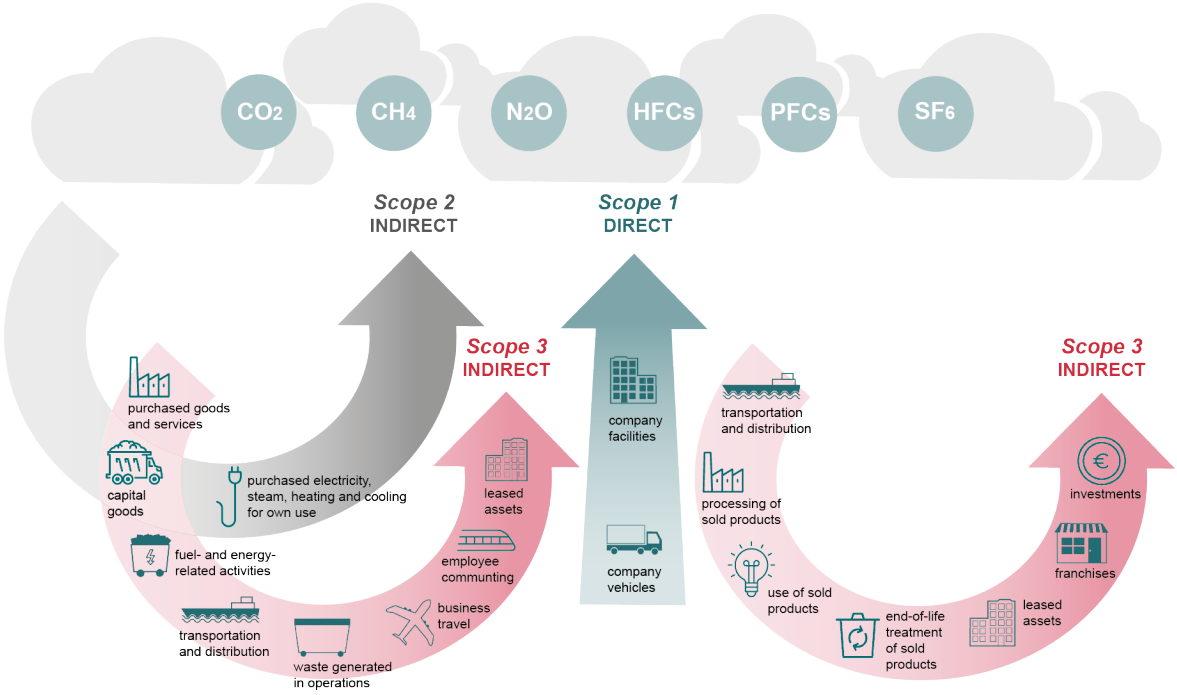


Figure 1 **Classification of Scopes 1, 2 and 3 in the value chain according to the GHG Protocol Accounting and Reporting Standard. Source: WRI and WBCSD (2011).**

To achieve a high level of credibility in relation to their climate footprint calculations, it is recommended that businesses obtain certification from an independent auditing company (e.g. TÜV or a financial accountancy firm) that verifies the principles described. Auditing standards (ISAE 3410 or ISO 14067) are already in place that are used in the context of such audits and are internationally recognised.

Box 2: Changing parameters for sustainability reporting in the EU

Sustainability reporting has evolved in recent years, partly due to growing legal requirements. Companies falling within the scope of the EU directive (Directive 2014/95/EU) had to report according to its provisions for the first time in 2018 (for the 2017 financial year). According to the directive, companies are required to report on two different types of sustainability risks (the double-materiality principle). The first type concerns risks associated with climate change that can be detrimental to the company's success. The second relates to negative climate impacts caused by corporate activities.

On 21 April 2021, the European Commission presented a proposal to amend the directive on non-financial reporting. The amendments include extending the scope of the reporting obligation to include more companies and introducing more detailed reporting requirements. The European Financial Reporting Advisory Group (EFRAG) has been tasked with drafting new, binding EU sustainability reporting standards by mid-2022. The intention of the legislative proposal is to give financial and non-financial information comparable status. Companies are likely to have to apply the standards for the first time in reports published in 2024 and covering the 2023 financial year.

2. Transparent communication

Net zero targets can help consumers, investors and credit institutions to take climate considerations into greater account in their consumption and financial decisions. To fulfil this function, targets must be communicated transparently and be comparable. These requirements relate not only to the way a neutrality target is set, but also to the way progress towards achieving the target is reported.

When communicating a neutrality target, businesses should report the following aspects transparently:

- Which greenhouse gases does the neutrality target cover (CO_2, certain greenhouse gases, all GHGs)? And which metric is being used to determine the global warming potential?
- What is the starting point? When will the neutrality target be achieved (target year)? And what interim targets have been set?
- Which emission sources does the neutrality target cover (Scopes 1, 2, 3)?
- What contribution should CO_2 removal measures within the value chain make towards achieving the target? And how will the quality of these measures be ensured?
- What contribution do carbon credits (reductions or removals) make towards achieving the target (offsetting)? Which certification standard is used for offsets? And how is the quality of the carbon credits ensured?
- What is the rationale behind the target and measures? Is the target reasonable and fair? What contribution does the target make towards the implementation of the overarching climate protection goals?
- Has the GHG inventory been verified by an independent auditing company?

Companies should also report regularly and transparently on the implementation of their net zero targets. The proportion of reductions made by a company itself should be presented and explained separately from both CO_2 removal efforts within its value chain and any measures to protect the climate that it has supported outside its own value chain (offsetting).

3. Investment in climate protection measures

Climate protection measures should be initiated at an early stage, both within the company itself and especially in its upstream (purchase of raw materials) or downstream value chain (e.g. the use of the sold product), even if they do not initially contribute towards the business's own climate neutrality. Although companies in the financial or service sectors in particular produce minimal emissions of their own, they drive emissions in the value chain. These Scope 3 emissions can already be recorded voluntarily today. However, due to the risk of double counting, these figures are not suitable for inclusion in GHG neutrality accounting. In particular, reduction effects, such as those resulting from the production of climate-efficient products, components or materials, do not "pay towards" their own climate targets (see the example in Box 3).

It is for these reasons that we advocate against net zero targets being the sole criterion for ambitious corporate climate strategies. Instead, we argue that they should be understood as building blocks in a wider strategy to protect the climate. Ultimately, it is also incumbent on policymakers to recognise that "climate protection in the value chain" is a contribution towards the transformation of the economy, and to demand and encourage it accordingly.

Box 3: Cutting greenhouse gases by insulating buildings

Space heating accounts for the largest proportion of final energy consumption by households in Germany. Insulation can make a significant contribution to reducing heating energy demand and thus the greenhouse gas emissions from burning gas and oil. However, the actual production of this insulation – regardless of the material used – requires energy, process materials and machinery. In the overall climate footprint of an insulated building, the savings made on heating energy usually outweigh the costs of producing the insulation materials.

However, this does not contribute toward the climate neutrality of the manufacturer of the insulation material. On the contrary, this company's own climate footprint may even be worse if particularly climate-friendly products are associated with higher process and energy emissions. So, while accounting for these effects directly is not possible (and should not be possible for reasons of double counting), the manufacturer is free to report these climate change mitigation potentials elsewhere.

4. Prioritising effective and fast-acting climate protection measures

Climate protection measures should be aligned with the targets set out in the Paris Agreement and the state of scientific knowledge as described, for example, by the Intergovernmental Panel on Climate Change (IPCC) in regular reports. In 2018, the IPCC published a short report that explicitly explored the response to the Paris climate targets (limiting warming to 1.5°C) (IPCC, 2018). The report not only summarises the risks of climate change, but also discusses four pathways for achieving the 1.5°C target.

The principal differences between the pathways lie in the development of global energy consumption and prosperity as well as in the use of carbon dioxide removal (CDR) technologies; in other words, measures that take CO_2 out of the atmosphere. Methods of CO_2 removal range from reforestation to the use of bioenergy and the storage of greenhouse gases (referred to as BECCS technologies). What all the pathways have in common is that the primary purpose of "removing" CO_2 is to

neutralise the effects of greenhouse gas emissions that cannot be reduced by other means. Depending on the scenario, up to 1,000 $GtCO_2$ would need to be offset within approximately 80 years.

However, a CDR strategy on this scale is neither feasible nor sustainable according to the current state of scientific knowledge. Therefore, in order to limit emissions offsetting to a few hundred gigatonnes, rapid and significant reductions in current global emissions are needed, which must also be supported by measures to capture carbon dioxide.

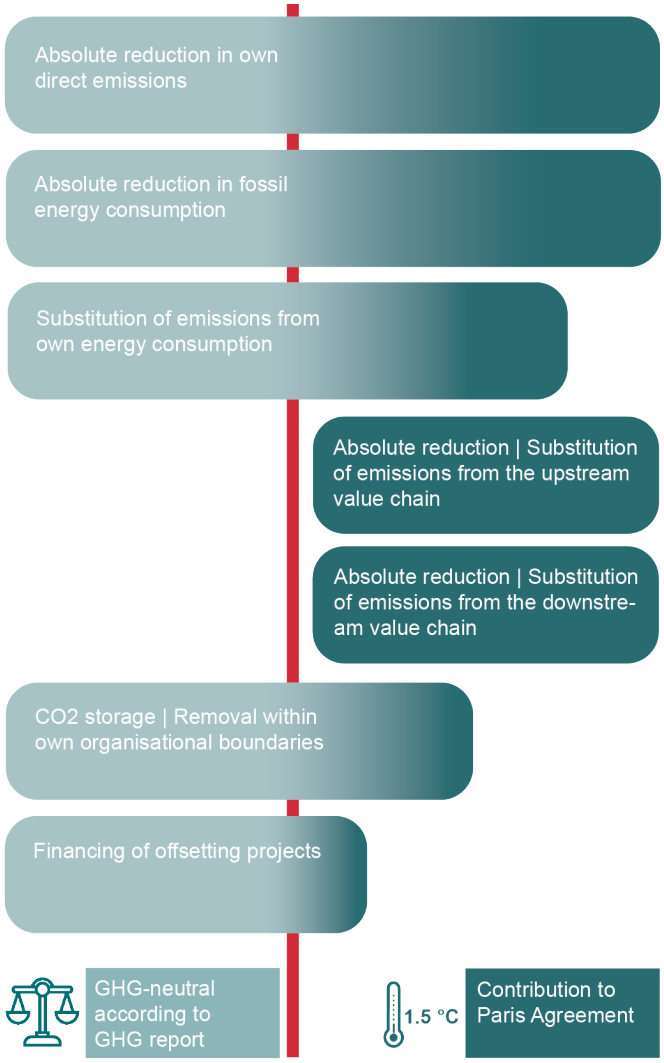


Figure 2: Prioritisation of climate protection measures in companies. Source: Wuppertal Institute.

This information forms the basis of a prioritised list of suitable measures, all of which contribute to achieving the Paris climate targets but do not necessarily directly influence a company's own "GHG neutrality" (see Figure 2).

What is essential here is that emissions are reduced in absolute terms and offsetting is only used for those areas in which emissions cannot (yet) be reduced or avoided.

The details of these measures should be laid down in the company's own road map and may by all means be based on business management approaches such as internal carbon pricing. In our view, an internal price on the amount of carbon dioxide a company emits is a helpful guidance tool. It involves assigning a monetary value to emissions resulting from business activities. The different departments within a company are charged a levy based on the volume of emissions and the underlying carbon price, with this levy deducted from the individual department's budget. In contrast to external pricing, the revenues generated by an internal charge stay within the company and can be used to finance climate protection measures.

Low-investment and minimally invasive measures may, therefore, be preferred (low-hanging fruits) if it means that emissions can be cut substantially and at an accelerated rate. For example, switching to a renewable electricity supplier is often an easy step to take. When moving to a green electricity tariff, companies should look for a labelled product. Labels such as Germany's Grüner Strom guarantee that purchasing green electricity helps to fund new renewable electricity generation plants.[4]

5. Measures to remove or store CO_2

Achieving the Paris climate targets is contingent on shrinking the world's carbon footprint to zero. However, there are a number of sources for which emissions cannot be completely eliminated. These so-called unavoidable emissions are produced, for example, in livestock farming and as by-products of chemical processes.

As explained above, measures to remove or store CO_2, which is regarded as the most important greenhouse gas, can be a solution in these cases. The umbrella terms CDR (carbon dioxide removal) or NET (negative emissions technologies) are usually used for these types of techniques. On the one hand, they include measures that are easy to implement but geographically limited, such as replanting forests. However, they often also involve chemical and technical processes that are either not yet feasible on a large scale or do not have a good cost–benefit ratio. One such example is direct air capture (DAC), a process in which CO_2 is removed from the atmosphere using filter systems. In addition, even promising processes like BECCS (bioenergy with carbon capture and storage) come up against planetary boundaries. For example, widespread implementation of BECCS would have negative impacts on biodiversity, among other consequences.

We therefore call for such processes only to be used to achieve climate neutrality (or even only planned into the road map) if they serve to limit unavoidable emissions or can be implemented within a company's own organisational boundaries (such as direct carbon capture for use in its own industrial processes). This is the only way to ensure that the positive effects, or the resulting negative emissions, can be fully counted towards the company's own emissions and actually contribute towards the Paris climate targets.

[4] For further information about the label see: https://www.gruenerstromlabel.de//en/.

6. Targeted and limited use of offsetting

In addition to reducing their own emissions, businesses can also implement climate protection measures outside their own value chains. Such measures are particularly significant for those companies that cannot completely eliminate their emissions. For example, using a district heating network as a heating source makes good environmental sense and is climate-friendly, but the heating network's emission factor cannot be directly influenced by the company's own actions.

The inability to avoid emissions can have both technological and economic reasons. For instance, some sectors and processes produce greenhouse gas emissions for which there is currently no technological solution. Agriculture and certain process emissions in the manufacturing industry (e.g. cement) are two such cases. However, emissions can also be unavoidable from an economic perspective, if avoiding them would lead to prohibitively high costs. The emissions that should be regarded as unavoidable vary from sector to sector. The unavoidability of emissions changes over time thanks to technological progress, which is why the avoidability of emissions should be reassessed at regular intervals.

One possible way to deal with unavoidable emissions is to offset them using carbon credits. Offsetting allows a company to count carbon credits generated outside its value chain towards the implementation of its own climate protection target. Steps should be taken to ensure that offsetting is only used for emissions that are actually unavoidable. Conversely, a neutrality target that is achieved exclusively by purchasing carbon credits is not compatible with the requirements of the Paris Agreement. That is because widespread adoption of this approach to achieve the climate targets would quickly come up against technological limitations and planetary boundaries. The use of carbon credits can therefore only play a complementary role in the corporate value chain.

7. Quality requirements for carbon credits

To ensure that each carbon offset credit actually represents one tonne of CO_2 reduced or avoided and that environmental integrity is maintained, the offsets must meet certain quality requirements. One such requirement is that they must ensure additionality. This means that a climate protection measure would not have been carried out without the additional incentive of the carbon credit. Furthermore, in order to correctly calculate the measure's climate protection effect, it is crucial not only that the project emissions are rigorously monitored and recorded, but also that they are compared against a realistic and robust reference case (the baseline). For example, the choice of energy system to be compared has a significant impact on the greenhouse gases potentially avoided by using renewable energy. There are major uncertainties associated with determining the reference emissions and ensuring additionality. That is because they are both based on assumptions relating to hypothetical, unobservable developments.

Other considerations that need to be taken into account are possible carbon leakage and the impermanence of the climate protection effect achieved. Above all, however, the social and environmental impacts of climate change mitigation measures must also be taken into account by avoiding negative effects and promoting synergies. For

example, the local population can benefit from participation in a reforestation programme, while the biodiversity of the ecosystem is improved by using endemic plants. The existing certification standards set different priorities and use different methods to uphold the quality of carbon credits. Companies considering purchasing carbon offsets should refer to established certification standards and familiarise themselves with the details of the project in which the credits were generated (see Box 4).

Box 4: Guidance on the purchase of carbon credits

Companies wishing to purchase carbon credits on the voluntary carbon market face the challenge of making appropriate choices from the various certification standards and climate protection projects. Different tools and guides are available to help them make their selection. A publication from the German Environment Agency offers companies an initial overview of the range of certification standards (Wolters et al., 2018). Analyses and recommendations that relate to an earlier version of a standard are often only of limited value. Buyers should therefore also always closely examine the climate protection project in which the carbon credits were generated. An important source of information in this regard is a guide on the use of offsets published by the GHG Management Institute and SEI. This sets out the key questions buyers should ask when choosing carbon credits in order to identify high-quality ones (see Broekhoff et al., 2019). Further guidance on the purchase of carbon credits will be provided by the Carbon Credit Quality Initiative by Öko-Institut, EDF and WWF. The initiative aims at enabling carbon credit buyers to identify high-quality carbon credits by assessing different project types and certification standards (CCQI, 2021).

8. Robust accounting of carbon credits

With conventional offsetting, tCO_2e is the common unit used as the basis for crediting the climate protection impact: for every tCO_2e that could not be reduced within the value chain, one avoided tCO_2e (or one tCO_2 removed from the atmosphere) is claimed. However, this approach faces major challenges under the Paris Agreement. In the past, climate change mitigation projects were predominantly carried out in developing countries that did not have their own reduction targets. The savings achieved in the projects could thus be transferred to the purchasing companies without further ado; there was no national climate protection goal against which the transferred reductions would have needed to be accounted. This is now changing with the Paris Agreement, which obliges all states to set national climate protection goals and implement corresponding measures. As a result, the part of the economy that is not included in climate protection goals is becoming ever smaller and, at least in the medium term, climate protection projects will be covered by national climate protection goals.

This raises the question of whether the reductions used by a company can also be used at the same time to meet a climate protection goal in the country of implementation. Where reductions are transferred between two states, the Paris Agreement stipulates that any such double counting must be prevented (see Box 5 on emission reductions accounting).

Box 5: Emission reductions accounting under the Paris Agreement

The Paris Agreement offers its parties the option to work together on the implementation of their climate protection targets. The cooperation mechanisms set out under Article 6 of the agreement are intended not only to facilitate the implementation of existing climate protection targets, but also to lead to more ambitious climate action and promote sustainable development. States wishing to make use of this option must, among other things, avoid the double counting of emission reductions. Although the detailed rules are still under negotiation, the parties did adopt some preliminary guidelines at the 2018 Climate Change Conference in Katowice. These rules require the parties to amend their emissions balance on the basis of so-called "corresponding adjustments" (paragraph 77d, UNFCCC, 2019b). According to this provision, states that import emission reductions can adjust their emissions balance downwards by the corresponding amount. Exporting states must record an addition in their emissions balance to account for the transferred reductions, leading to an increase in their net emissions. The following figure provides an example to illustrate this process. Here, State A exceeds its climate protection target of 100 $MtCO_2e$ by reducing its actual emissions from 120 $MtCO_2e$ to 90 $MtCO_2e$. State A exports emission reductions amounting to 10 $MtCO_2e$ to State B. State B credits these reductions against its own target by adjusting its emissions balance downwards (from 100 $MtCO_2e$ to 90 $MtCO_2e$). This means it can meet its target, which it would otherwise have missed due to its own emissions (100 $MtCO_2e$) being too high. State A must adjust its emissions balance to the level of the exported reductions by raising its emissions balance from 90 $MtCO_2e$ to 100 $MtCO_2e$.

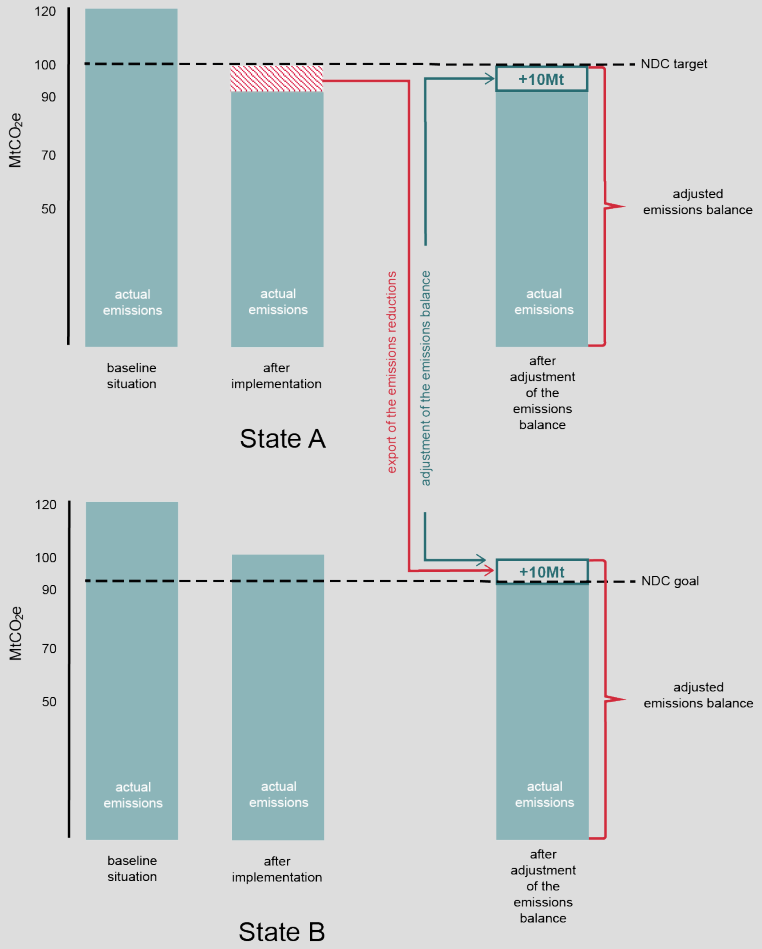


Figure 3: Example illustrating the allocation of emission reductions. Source: Wuppertal Institute.

Double counting reductions is also prohibited under CORSIA, the offsetting system used by the International Civil Aviation Organisation. However, this issue has yet to be clarified with respect to the voluntary carbon market – that is to say, the market in which businesses purchase carbon credits to implement their own voluntary

targets. While some actors want to allow double counting between companies and states, others argue for strict accounting even for the voluntary use of emission reductions by companies. It is our view that double counting should be prohibited for all carbon offsets used by companies to meet net zero targets. This is the only way to ensure the environmental integrity of the Paris Agreement and avert reputational risk to the voluntary carbon market.

9. Supporting climate action in the Global South

Double counting of emission reductions can be prevented by accounting exported GHG reductions against a state's national emissions balance. However, the infrastructure needed to support such an accounting method is still in development. While the parties to the Paris Agreement have agreed in principle on a robust accounting system, how it will be implemented remains unresolved. It is also unclear whether the system will even be suitable for use in the voluntary carbon market. Even if this is assured and the parties reach an agreement at the Climate Change Conference in Glasgow in November 2021, it is reasonable to assume that it will still take until the middle of the decade for the system to be set up.

In addition to these technical challenges, there are also major political uncertainties related to the implications of the accounting system from the perspective of the exporting state. Every exported reduction that the exporting country has to take into account in its emissions balance makes implementing its own climate protection goal more difficult, at least in the short term. Countries are therefore likely to be very reluctant to approve the export of emission reductions. These challenges could lead to a severe shortage in the supply of carbon credits, which will raise their price.

These developments and the challenges facing the voluntary carbon market on the supply side have so far largely escaped the notice of companies wishing to use these carbon credits to achieve their targets. Instead, the announcement of more and more new neutrality targets is steadily driving up potential demand for carbon credits, as most companies are reliant on carbon credits to some degree in order to achieve their neutrality targets. If companies do not take the challenges of the voluntary market into consideration from an early stage, this could lead to undesirable effects:

- Companies will miss their net zero targets, because the required carbon credits are not available.
- Companies will achieve their net zero targets by using carbon offsets that were not taken into account in the emissions balance of the exporting country (double counting).

Given these challenges, as well as the fundamental difficulties associated with offsetting, companies should consider alternative financing approaches (for an example, see Box 6 on the Corporate Climate Mitigation Blueprint).

Box 6: Alternative approaches for financing climate protection measures outside a company: the Corporate Climate Mitigation Blueprint

The discussion about the limits of offsetting has led to the emergence of numerous alternative financing approaches. One such approach is the Corporate Climate Mitigation Blueprint put forward by WWF and the Boston Consulting Group. It comprises the following **four steps**:

1. Robust calculation of a company's own emissions based on an international accounting standard (e.g. GHG Protocol Corporate Accounting and Reporting Standard) and transparent communication
2. Reduction of a company's own emissions in line with a science-based target pathway (e.g. the Science Based Targets initiative)
3. Quantifying a financial commitment by pricing remaining emissions
4. Investing in measures to protect the climate and the environment

It is in steps 3 and 4 in particular where this approach is different. By quantifying a financial commitment with the help of internal emissions pricing (step 3), the external costs of unavoidable emissions are internalised, giving businesses a basis for their climate protection investments. The amounts to be paid by the company are thus still linked to its own emissions. For example, the social and environmental costs of the GHG emissions calculated for the business can be used to set the carbon price.[5]

When it comes to making investments (step 4), a wide variety of measures can be supported. Since the investments are made on the basis of the financial commitment made beforehand, innovative climate change mitigation solutions can also be funded that don't (yet) have a direct quantifiable climate protection effect, but rather systemic, holistic effects. For example, it would be conceivable to support the development of sustainable transport infrastructure, which, while not directly reducing emissions, does make a contribution towards protecting the climate in the long term and achieves wide-ranging sustainability impacts. That is because, unlike the situation with offsetting, the climate protection effect of the supported measures is not set off against the company's emissions.

With the help of these approaches, the current accounting problem can be circumvented under the Paris Agreement. Another advantage of these approaches is that the external contributions no longer need to be linked to the achievement of certain results (results-based payments). This means that the climate protection measures supported by the business can be aligned more closely with the achievement of long-term effects with a systemic and transformative impact than would be possible through offsetting.

However, companies can no longer have the contribution that is made towards protecting the climate credited against their own targets. Instead, they play a part in financing climate protection and help to achieve the climate protection goals set by the states. Nevertheless, the use of such an approach has far-reaching implications for how net zero targets are used in corporate communications.

10. Claims: beyond climate neutrality

For many companies, the opportunity to promote themselves as climate-neutral businesses is a key driver behind their commitment to protecting the climate. Now, with the concept of climate neutrality, a claim has been introduced that puts this commitment across in a nutshell. The use of the concept of climate neutrality in corporate communications is, however, fraught with problems. For example, marketing individual products as "climate-neutral" can be misleading, since hardly

[5]The figure put on this by the German Environment Agency for Germany in 2016 is EUR 180/tCO_2e (Matthey & Bünger, 2019). Calculations by the World Bank's Carbon Pricing Leadership Coalition (CPLC) put global price corridors for carbon pricing policy instruments at USD 40–80/tCO_2e by 2020 and USD 50–100/tCO_2e by 2030 (High-Level Commission on Carbon Prices, 2017).

any products are completely climate-neutral over their entire life cycle. The same is true of companies that claim to be climate-neutral and offset emissions that they have not avoided. This raises the risk of the term degenerating into a meaningless platitude. Some companies have already adapted their communication strategies accordingly (see Box 7).

Box 7: New ways companies are communicating their efforts to protect the climate

Some companies have already recognised that labelling themselves as "climate-neutral" is problematic. For example, in recent communications about its climate neutrality, the Swedish company Haglöfs pointed out that, although it is climate-neutral in purely accounting terms, it continues to produce emissions. To achieve climate neutrality, the company has had to "cheat" by using offsets.

Figure 4: Haglöfs is taking a new approach to communicating its own climate protection efforts. Source: Haglöfs (2021).

Against this background, companies should already consider adopting new approaches when communicating their climate protection efforts and break away from the "climate-neutral" slogan. Corporate communications in which a company's own emissions are communicated separately from the climate protection measures it has supported (see Chapter 2) have numerous advantages. By avoiding giving the impression that a product or service has no impact on the climate, the risk of consumers making misguided decisions can be reduced. Also, innovations within the company's own value chain are given greater recognition and not seen as equivalent to the mere purchase of carbon credits.

Communicating information in this way also makes it possible for companies to overcome the offsetting approach and use alternative financing approaches instead (see Chapter 9). Last but not least, it can be argued that consumers and investors will reward this honest form of communication, as it signals that the business does not see its own carbon neutrality as an end point and is aware of the shortcomings of the offsetting approach.

Establishing a suitable label could support this more comprehensive communication strategy. This label should not only break down the company's emissions balance, but could also answer other questions, including: What role does the company play compared with competitors in the same industry? How significant is the company in terms of the social and environmental transformation? And, how is the company performing in other aspects of sustainability? A label that addresses these points and more besides would pave the way for a more appropriate ranking of companies and their products and services, and should be introduced as a minimum standard. Given the challenges associated with the development of a new label of this kind,

companies would need to cooperate more closely with civil society and the scientific community, and be supported in this endeavour by policymakers.

In light of the issues relating to net zero targets and offsetting that have been outlined in this paper, the Wuppertal Institute will continue to carry out research in this field in the future. The aim of our work is to take advantage of the existing momentum surrounding corporate climate action and to collaborate with actors from the business, political and social spheres on the development of innovative approaches that will make an effective contribution towards protecting the climate and achieve positive sustainability outcomes.

References

Broekhoff, D., Gillenwater, M., Colbert-Sangree, T., & Cage, P. (2019). *Securing Climate Benefit: A Guide to Using Carbon Offsets*. 60. http://www.offsetguide.org/wp-content/uploads/2020/03/Carbon-Offset-Guide_3122020.pdf

CCQI. (2021). *The Carbon Credit Quality Initiative—About*. Carbon Credit Quality Initiative. https://carboncreditquality.org

Haglöfs. (2021). *Haglöfs is now climate neutral but had to cheat to get there*. Mynewsdesk. https://www.mynewsdesk.com/haglofs/pressreleases/hagloefs-is-now-climate-neutral-but-had-to-cheat-to-get-there-3092141

High-Level Commission on Carbon Prices. (2017). *Report of the High-Level Commission on Carbon Prices*. https://static1.squarespace.com/static/54ff9c5ce4b0a53decccfb4c/t/59b7f2409f8dce5316811916/1505227332748/CarbonPricing_FullReport.pdf

IPCC. (2018). *Summary for Policymakers* [In: 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, sustainable development, and efforts to eradicate poverty]. https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf

Kachi, A., Mooldijk, S., & Warnecke, C. (2020). *Climate neutrality claims—How to distinguish between climate leadership and greenwashing* (p. 23). https://newclimate.org/wp-content/uploads/2020/09/Climate_neutrality_claims_BUND_September2020.pdf

Knight, C. (2013). What is grandfathering? *Environmental Politics*, *22*(3), 410–427. https://doi.org/10.1080/09644016.2012.740937

Kreibich, N., & Hermwille, L. (2021). Caught in between: Credibility and feasibility of the voluntary carbon market post-2020. *Climate Policy*, *0*(0), 1–19. https://doi.org/10.1080/14693062.2021.1948384

Machnik, D., Sun, P., & Tänzler, D. (2020). *Climate neutrality targets of European companies and the role of carbon offsetting* (p. 60). https://www.carbon-mechanisms.de/publikationen/details/climate-neutrality-targets-of-european-companies-and-the-role-of-carbon-offsetting

Matthey, A., & Bünger, B. (2019). *Methodological Convention 3.0 for the Assessment of Environmental Costs* (p. 45). Umweltbundesamt. https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2019-02-11_methodenkonvention-3-0_en_kostensaetze_korr.pdf

Wolters, S., Schaller, S., & Götz, M. (2018). *Voluntary CO2 offsetting through climate protection projects*. 44. https://www.umweltbundesamt.de/sites/default/files/medien/376/publikationen/guide_voluntary_co2_offsetting_through_climate_protection_projects_bf_2020_09_14.pdf

WRI & WBCSD. (2011). *GHG Protocol: 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. https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf