Scope 3 is further subdivided into so-called upstream and downstream emissions, depending on whether the emissions are related to the companies' own purchases or are only generated during the use or decommissioning phase of the products. How emissions are distributed at different stages of the value chain depends largely on the industry.

A company's own acquisition and investment decisions and other choices directly affect its scope 1 and 2 emissions and scope 3's upstream emissions. Through product development, it also has the opportunity to influence the downstream emissions of scope 3. When net zero targets are typically set quite far away, even decades away, emissions throughout the value chain can be considered to be under the control of the company.

Scope 3 emissions must be included in the Science Based Targets net zero claim. However, full coverage of all scope 3 emissions is not required even in the Science Based Targets criteria, where the long-term net reduction target should cover 90% of scope 3 emissions. Race to Zero is more vague in its terms, as it states that scope 3 emissions should be included when they are significant and they can be reliably estimated.

Carbon neutrality

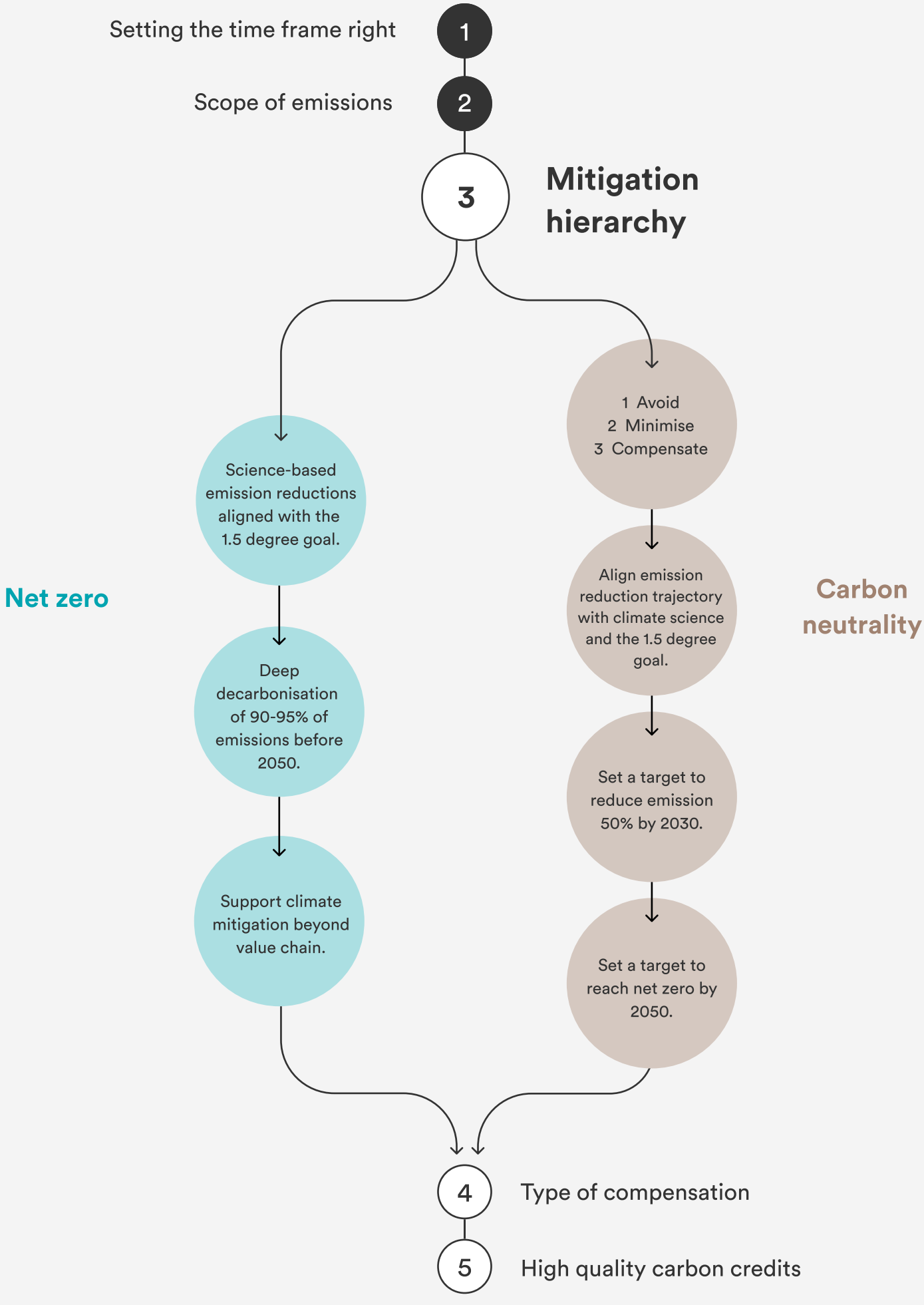
For a corporate carbon neutrality claim to be credible, it should cover all scopes of emissions. All GHGs can also be included, thus expanding the claim to CO_2 equivalency (CO_2e) or climate neutrality (see page 11 for difference between carbon neutrality and climate neutrality).

Scopes 1 and 2 are easy to define in most cases, but scope 3 is where the challenge lies. It is not uncommon to see carbon neutrality claims where scope 3 emissions are completely excluded. Scope 3 is usually the largest source of emissions, culpable for as much as 90% among certain types of companies. Thus including accounting for them in corporate climate targets is essential.

The bare minimum requirement for companies making a carbon neutrality claim, is to be extremely transparent about what scopes are included.

Making a carbon neutrality claim without any Scope 3 emissions is not credible.

Thus companies should strive to include scope 3 emissions whenever they are significant and can be reliably calculated. Most upstream scope 3 emissions fall under this category.


Setting the time frame right
1
Scope of emissions
2
3
Mitigation hierarchy
Net zero
Science-based emission reductions aligned with the 1.5 degree goal.
Deep decarbonisation of 90-95% of emissions before 2050.
Support climate mitigation beyond value chain.
1 Avoid
2 Minimise
3 Compensate
Align emission reduction trajectory with climate science and the 1.5 degree goal.
Set a target to reduce emission 50% by 2030.
Set a target to reach net zero by 2050.
Carbon neutrality
4
Type of compensation
5
High quality carbon credits

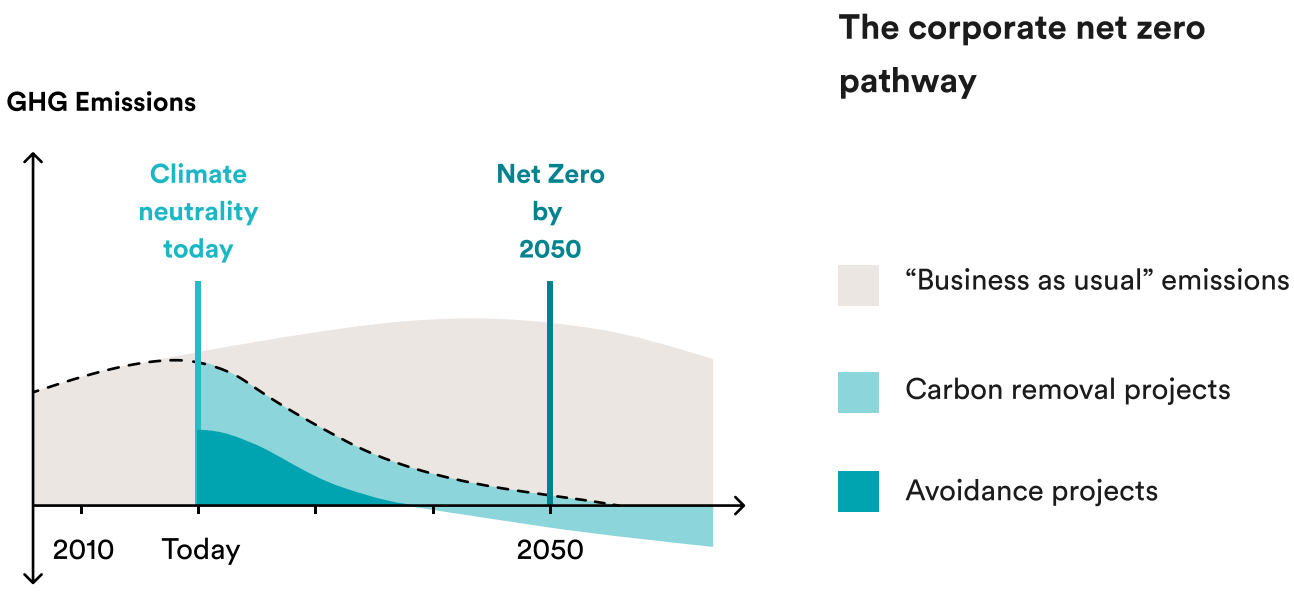
3 Mitigation hierarchy

Net zero

Net zero is not the same as absolute zero, where no emissions occur. In the net zero context some emissions still occur but they are offset by measures that counterbalance them, thus resulting in a net zero impact on the climate.

Race to Zero states that in a net zero framework, emissions reductions should follow *"science-based pathways"*. SBTi goes further in defining what these pathways should be, by stating that emissions should be reduced to a *"residual level in line with 1.5°C scenarios by no later than 2050"*. In practice the SBTi approach means that most companies will have to reduce emissions by at least 90-95%.

It is important to note that both Race to Zero and SBTi emphasise that no net zero claim can be made until emission reductions reach a certain level.



In the case of SBTi that means reaching “deep decarbonisation of 90-95% before 2050”. When that point is achieved, companies need to reach net zero by “neutralising” the remaining unabatable emissions through carbon removal.

It is thus clear that these leading net zero standards strongly emphasise the primary role of emissions reduction in achieving net zero. Aligning emission reductions with climate science and the 1.5 degree goal set in the Paris Agreement is the most important step in reaching net zero. Compensation, or neutralisation in the case of SBTi, is meant for only a very small amount of unabatable emissions.

Even though compensating does not play a key role in reaching net zero it doesn’t mean that companies shouldn’t use the voluntary carbon market to support further climate action. SBTi strongly recommends that companies invest in climate mitigation beyond their value chains on the road to net zero, but this must be in addition to, not instead of, deep emission cuts in line with science.

Carbon neutrality

There is less standardisation around the mitigation hierarchy when it comes to carbon neutrality claims. At a high level, companies should abide by the following hierarchy: 1) avoid emissions, 2) minimise unavoidable emissions, 3) compensate for remaining emissions. But this can be interpreted in many different ways and it leaves too much room for ambiguity.

Compensate strongly believes that a high integrity carbon neutrality claim should be aligned with climate science.

Aligning a company's emissions reduction trajectory and measures with a science-based net zero target, as described above in the previous section, also solves the mitigation hierarchy question for a carbon neutrality claim.

So the first step is to commit and undertake measures to reach a science-based net zero target. This also includes making rapid emission cuts now, and halving emissions by 2030 as prescribed in the SBTi net zero standard.

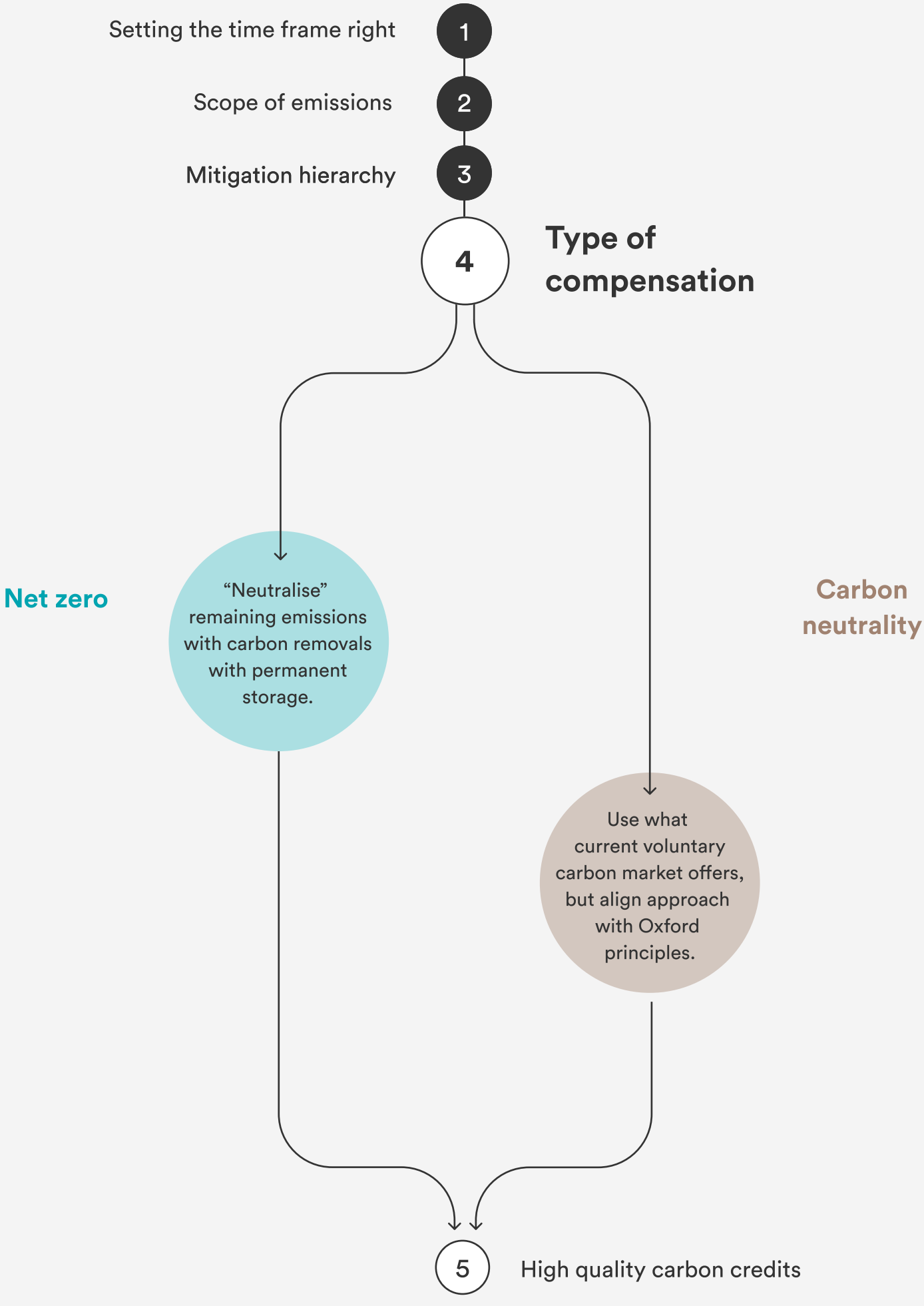
Where a net zero claim and Compensate's definition of a high integrity carbon neutrality claim differ, is that a carbon neutrality claim can be made today with the use of compensation, as long as emission reduction measures are aligned with science-based targets, while a net zero claim can only be made when up to 90–95% emission reductions have first been reached.

It is crucial to note, however, that using the voluntary carbon market to compensate emissions today, should have no impact on a company's science-based emission reduction trajectory and measures.

Emission reduction needs to be locked into a pathway that is aligned with climate science and the 1.5 degree goal. Compensation is always supplementary to these measures, not a substitute for them.

But as discussed in the section on time frames, there is also no reason to wait for a moment when a certain level of emission reductions have been achieved, before voluntary carbon markets and compensation can be used. Considering the urgency of the climate crisis, compensation can and should be used immediately to take responsibility for our present day emissions. Considering our huge carbon debt, compensation is also a useful tool to take responsibility for historic emissions.

It is important to note that carbon neutrality doesn't have to be an end goal for corporate climate action. But rather, it can be a first step on the way towards a more long term net zero target. The role of compensation will just evolve and diminish along the way to net zero.


Setting the time frame right
1
Scope of emissions
2
Mitigation hierarchy
3
4
Type of compensation
Net zero
“Neutralise” remaining emissions with carbon removals with permanent storage.
Carbon neutrality
Use what current voluntary carbon market offers, but align approach with Oxford principles.
5
High quality carbon credits

4 Type of compensation used

Net zero

Any type of compensation is generally valid for a carbon neutrality claim, but the net zero target is generally considered to require compensation based on the removal of carbon from the atmosphere by human activities.

The SBTi Net-Zero Standard states that remaining emissions must be *"neutralised by removing carbon from the atmosphere into permanent storage."* Even though SBTi uses the term *"permanent"*, at the moment it approves many nature-based removal methods like afforestation or planting mangroves, that are not considered as permanent as many engineered approaches to carbon removals.

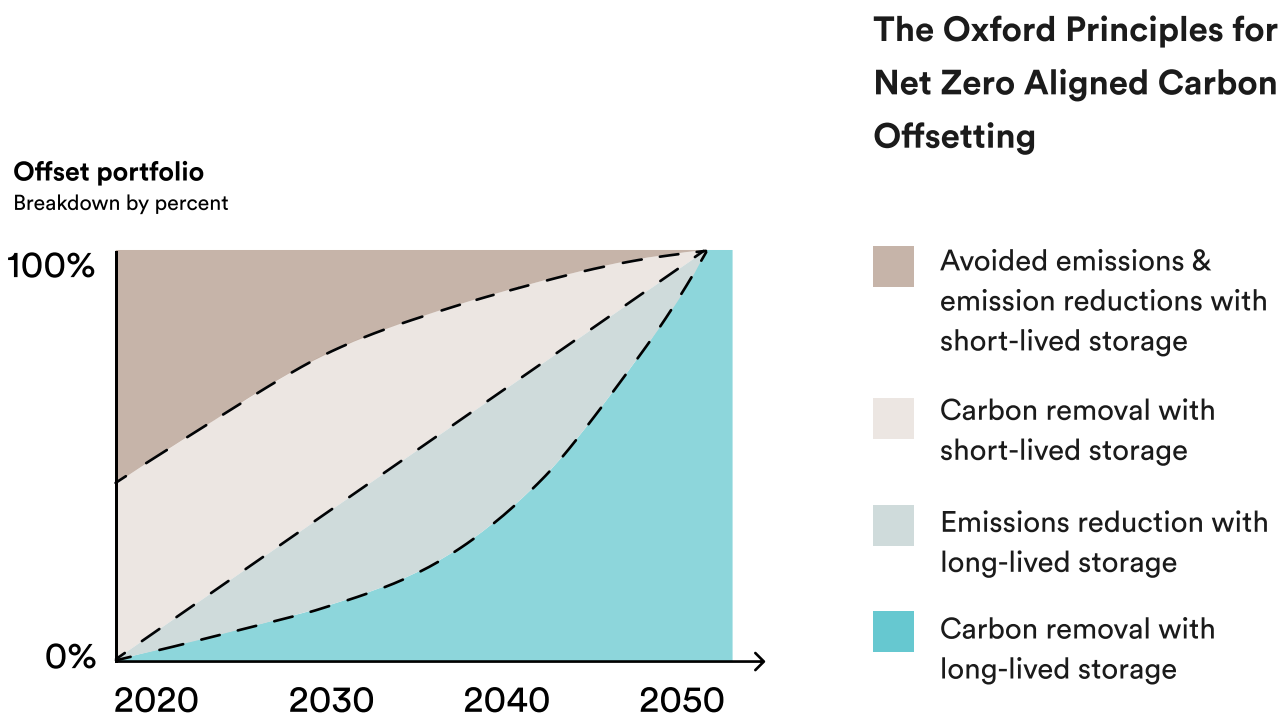
Avoided emission projects reduce emissions compared with a business as usual baseline scenario. Projects that protect forests from deforestation or replace fossil fuel energy with renewable energy fall under this category. In these projects current emissions are reduced by improved alternatives, but existing CO_2 is left untouched.

Carbon removal projects absorb additional CO_2 back from the atmosphere. These include nature-based projects where carbon is sequestered and stored into biomass like trees, seagrasses or soil. There are also engineered methods to remove carbon such as direct air capture and storage.

The Oxford Principles on Net Zero Aligned Offsetting has taken a similar approach. According to the principles companies should:

- → shift offsetting towards carbon removal, where offsets directly remove carbon from the atmosphere;
- → shift offsetting towards long-lived storage, which removes carbon from the atmosphere permanently or almost permanently; and
- → support for the development of a market for net zero aligned offsets.

The required shift to longer lived storage of carbon can be illustrated by this graph:



In practice, what kind of compensation is available to reach the net zero target depends largely on the target year.

Compensation based on, for example, carbon capture directly from the air and geological storage is unlikely to be widely available in 2030, making it difficult to avoid worse alternatives such as increasing carbon stocks in forests. Instead, the net zero targets for 2050 should aim at long-term storage of carbon sequestered from the atmosphere.

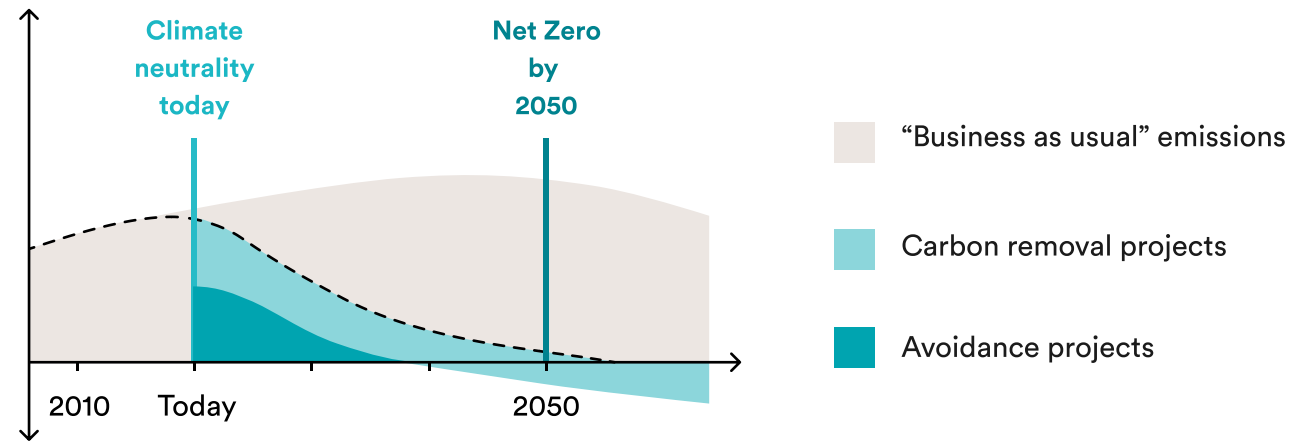
Carbon neutrality

As carbon neutrality claims can and should be made already today, companies have to rely on what the voluntary carbon market has to offer in the present. Avoided emissions projects with short-lived storage make up the vast majority of carbon credits available on the current market. Removals are only five percent of the market today. Companies must operate in this reality.

However,

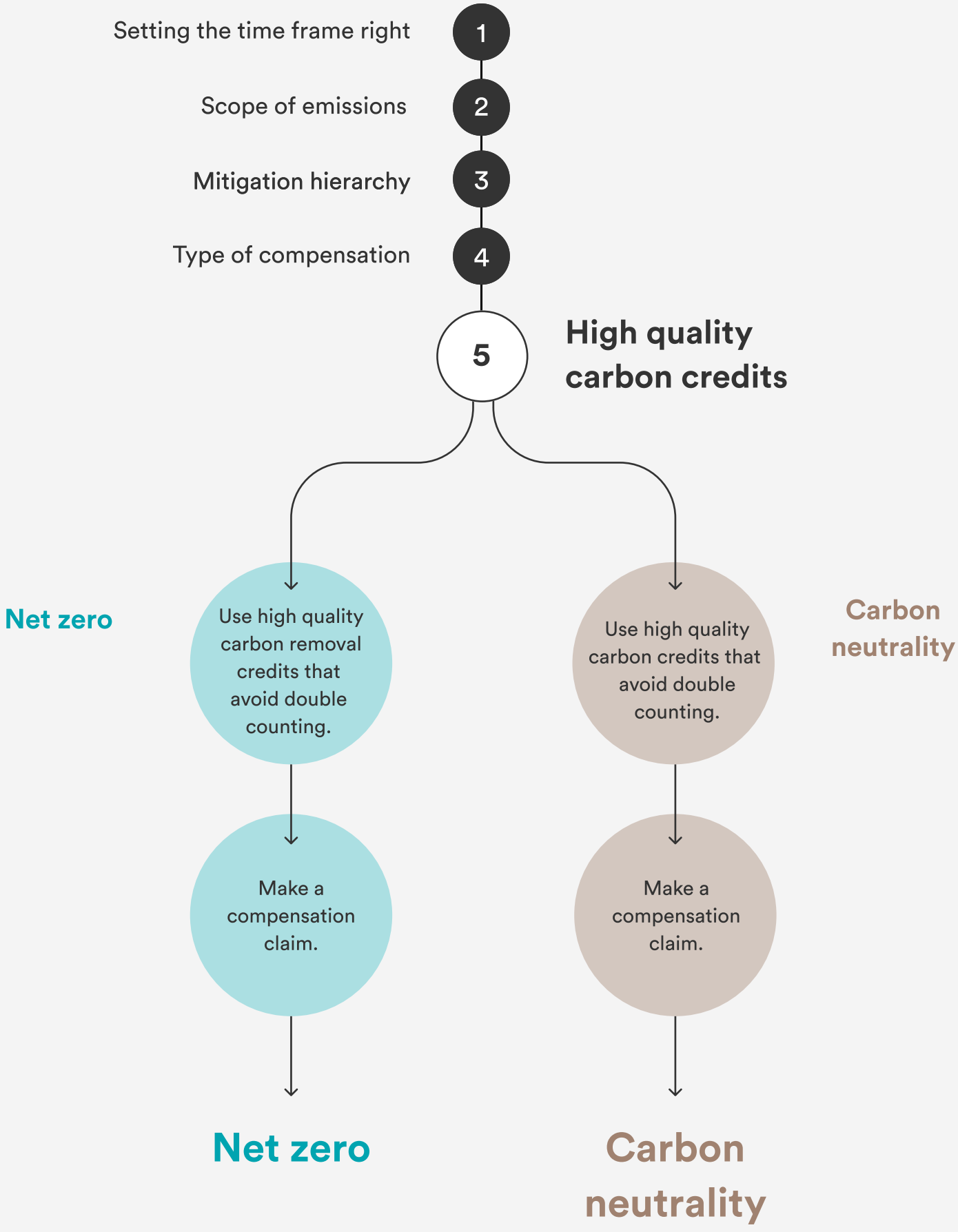
Compensate fully agrees on the Oxford Principles and strongly recommends companies to develop their compensation approach accordingly.

The corporate net zero pathway



Compensate's own portfolio of carbon projects follows the Oxford Principles and already includes 50% removal projects. Compensate has also started to gradually phase out avoided emissions projects with short-lived storage. Increasing the share of both avoided emissions and removal projects with long lived-storage is also a priority in developing Compensate's dynamic portfolio of carbon projects.

The third part of the IPCC Sixth Assessment Report, that focuses on how to mitigate the climate crisis, also emphasizes the need for carbon removals. According to the report, not even radical emissions reductions are enough anymore. Methods for removing CO_2 from the atmosphere are "unavoidable" if the world is to reach net zero – both globally and nationally.


Setting the time frame right
1
Scope of emissions
2
Mitigation hierarchy
3
Type of compensation
4
5
High quality carbon credits
Net zero
Use high quality carbon removal credits that avoid double counting.
Make a compensation claim.
Net zero
Carbon neutrality
Use high quality carbon credits that avoid double counting.
Make a compensation claim.
Carbon neutrality

5 How to ensure the quality of carbon credits?

Both net zero and carbon neutrality claims need to be constructed with high quality carbon credits regardless of if they are based on avoided emissions or carbon removals.

Acknowledging the flaws of the current market

Compensate's previous white paper "Reforming the Voluntary Carbon Market" highlighted worrying quality issues that the current market has. It also introduced Compensate's unique approach to navigate a fundamentally flawed market. The white paper received a lot of attention and has been featured in several respected media outlets, including Bloomberg, Quartz, Carbon Pulse, Nikkei, Business Green, Business Insider and Sifted.

In early 2020 Compensate, together with its independent Scientific Advisory Panel, created a sustainability criteria to screen and evaluate forest-based carbon projects. The criteria helps Compensate choose projects that have a positive impact on the climate, but also on biodiversity, human rights, and for local communities.

Over the past two years, Compensate has screened and evaluated over 150 carbon projects. We have seen that over 90% of projects fail basic sustainability checks. Almost all evaluated projects are verified under international carbon standards like Verra, Gold Standard or Plan Vivo. The vast majority of evaluated projects have been nature-based, mostly either forest protection or afforestation/reforestation projects.

The reasons why projects fail vary, but are all equally alarming. Some projects cannot be considered additional, others have serious permanence risks.

Some have unreliable baselines, because assumed deforestation is largely inflated. Worryingly, many projects also cause serious human rights violations.

It is evident from Compensate's experience that the voluntary carbon market has much work to do.

The market must acknowledge these current flaws and understand the risks associated with carbon neutrality and net zero claims.

It is not easy to estimate the climate impact of compensating tied to net zero or carbon neutrality claims, simply because the quality of carbon projects varies significantly. Overestimating the climate impact of projects can lead to misleading estimations of the amount of avoided emissions or CO_2 removed from the atmosphere.

In theory, fulfilling corporate net zero or carbon neutrality pledges should lead to a reduction of CO_2 in the atmosphere, but in practice the result could as well be an increase in CO_2 instead. The net increase in emissions is the result of using low quality carbon credits that claim to have climate benefits, but in reality do not change the amount of CO_2 in the atmosphere. The outcome is that companies keep emitting CO_2 into the atmosphere and these emissions are not counterbalanced by the carbon projects they buy credits from.

While quality varies tremendously, especially when it comes to nature-based solutions, this is not something carbon credit sellers or resellers necessarily tell buyers. Disclosing such information is not in the seller's best interest, as selling low quality credits could undermine their reputation. Sometimes, sellers are not even aware of the quality of the credits they sell.

When challenged on the quality of credits, businesses and offset providers stand behind the international standards as a means of assuring the quality of the offsets. But as Compensate has discovered, not even the most renowned international standards can guarantee real climate impact.

What does all this mean for those looking to use carbon credits to make a credible net zero or carbon neutrality claim?

Compensate has developed a unique solution to mitigate the flaws of the current market. It includes strict criteria for projects, in-built overcompensation, and a diverse portfolio of projects to mitigate risks.

The approach will be presented in more detail in the following chapter that presents the Compensate Credit.

Avoiding double counting

Under the Paris Agreement, post-2020, each country is to report on its climate actions, and progress towards the set climate targets or the Nationally Determined Contributions (NDCs). This has implications for many of the projects selling carbon credits on the voluntary carbon market.

After 2021, all carbon projects will automatically contribute towards their host country goals under the Paris Agreement if the specific project type is included in the country's NDC. For instance, if the land use sector is in the NDC, the sinks from any forest-based carbon projects will be counted towards achieving the NDC.

When a compensation claim is made, that statement should be grounded in truth. It is simply not acceptable to make a compensation claim using emission reductions or removals that have already been counted and claimed by the host country of the project. Contrary to the intention, this in fact results in a net increase of emissions in the atmosphere as only 1 tCO_2 has been avoided or removed instead of 2 tCO_2 - one by the company and one by the host country.

If a company claims to be carbon neutral through carbon credits that are also counted into the project's host country goals, as far as climate ambition is concerned, the company hasn't actually done anything extra. On the other hand, double counting can also disincentivize countries from implementing much needed climate action.

Either the so-called carbon inventories and reporting done by the host countries must be able to adjust to offsetters' claims, or the claims made by the companies must be adjusted.

The first option means implementing national registries of all voluntary carbon offset projects and deducting them from national greenhouse gas inventories and climate targets. These are called “corresponding adjustments”. This means that these CO_2 reductions or removals will not contribute to the host country’s national climate targets. In this way, emission reductions or removals will only be claimed once: for instance, in the case of corporate offsetting, only by the company making the compensation claim.

Corresponding adjustments would also mean that private climate action using carbon credits would go beyond what is already set in national policies. To be truly impactful, offsetting should always be additional to national climate targets for an increase in overall climate ambitions.

Another solution to the double counting issue would be differentiating claims into offset claims and “contribution claims”. Under the contribution model, companies would finance climate action and help countries meet their climate targets without making a compensation claim.

Compensate welcomes the contribution model. This would allow projects to be financed either by issuing carbon credits or through support for climate action and ecosystem services without the need to count towards achieving a net zero or climate neutrality target. However, this has to be very clearly understood by the companies using these credits. They would thus still need to use adjusted credits to reach a net zero or a carbon neutrality claim.

At Compensate we believe in sticking to the truth. Double counting has to be avoided either through corresponding adjustments or by using an alternative contribution claim.

At this point in the ever worsening climate crisis, there is simply too much at stake to make empty promises.

↓ Next: **5 The Compensate Credit**

5

The Compensate Credit

The Compensate Credit

Making a credible claim with current market standards for carbon credits is challenging. Compensate has created a unique solution to tackle the most crucial flaws that the current voluntary carbon market has. It is called the Compensate Credit.

The Compensate Credit is a high quality carbon credit that builds upon international standards, like Gold Standard and Verra, but goes even beyond them. It is based on a diverse portfolio of carbon projects that meet tight criteria related to climate integrity, biodiversity, social justice, and human rights. The credit has an in-built overcompensation that mitigates risks related to carbon projects and provides a more robust compensation claim compared to standard carbon credits.

Diverse portfolio

Like investment managers managing a fund to deliver the best value, Compensate creates a “meta-credit” by managing a diverse carbon project portfolio to deliver the best possible climate impact. This portfolio allows Compensate to maximise its clients’ investments into carbon projects. Diversification serves also as further mitigation against the risks associated with any given project.

The portfolio is diverse and dynamic, making it possible to mix a wide range of project types with different prices, while regularly monitoring and replacing existing projects with better ones. Currently, the portfolio consists of a selection of nature-based projects, including forest conservation, afforestation and reforestation, blue carbon and biochar. The share of each project is determined by the project's climate integrity score and its price, allowing for the best impact-cost ratio.

80% of the portfolio focuses on established nature-based methodologies, including forest conservation, reforestation and afforestation projects. 20% is dedicated to innovative carbon capture methods.

Commitment to Oxford Principles

Compensate is committed to developing the portfolio according to the Oxford Principles on Net Zero Aligned Offsetting. The portfolio is already split 50/50 between avoided emissions and carbon removal projects. Compensate has also started to gradually phase out avoided emissions projects with short-lived storage. Increasing the share of both avoided emissions and removal projects with long-lived storage is also a priority in developing Compensate's dynamic portfolio of carbon projects.

Strict project criteria

Compensate has, in co-operation and with guidance from its Scientific Advisory Panel, formed a criteria for evaluating all projects that are included in the portfolio. All projects are evaluated on climate impact, biodiversity, social justice and human rights. 90% of projects evaluated have thus far been excluded from the portfolio as they do not meet Compensate's criteria. Almost all evaluated projects are verified under international carbon standards like Verra, Gold Standard or Plan Vivo.

Innovative project types, like biochar, soil carbon, blue carbon (underwater carbon capture), are evaluated in a simplified manner, as these methodologies are still emerging and do not yet meet the strict criteria used for established methodologies. Compensate wants to incentivize the development and market access of these new methodologies, knowing their vast potential in helping solve the climate crisis and the many limitations of more traditional projects. By investing in innovative carbon capture, Compensate helps its clients not only compensate for their emissions with methodologies that would otherwise remain quite expensive, but also supports these modern solutions to fight climate change.

In-built overcompensation

In theory, each carbon credit sold on the voluntary carbon market is worth one tonne of CO_2. However, due to the many uncertainties in carbon projects, which are not always rigorously taken into account or mitigated, Compensate can't be confident that one standard carbon credit really equals one tonne of CO_2 either as avoided emissions or as CO_2 removed from the atmosphere.

Compensate's strict evaluation process includes scoring projects in order to estimate the real climate impact of one carbon credit. This results in a project-specific climate impact score. For instance, for a project with an impact score of 0.7, one credit is equivalent to 0.7 tonnes of CO_2. In order to provide a robust offsetting claim, Compensate overcompensates by purchasing enough credits to reach a real impact equivalent to one tonne of CO_2. This overcompensation mechanism is incorporated in the Compensate credit.

No double-counting

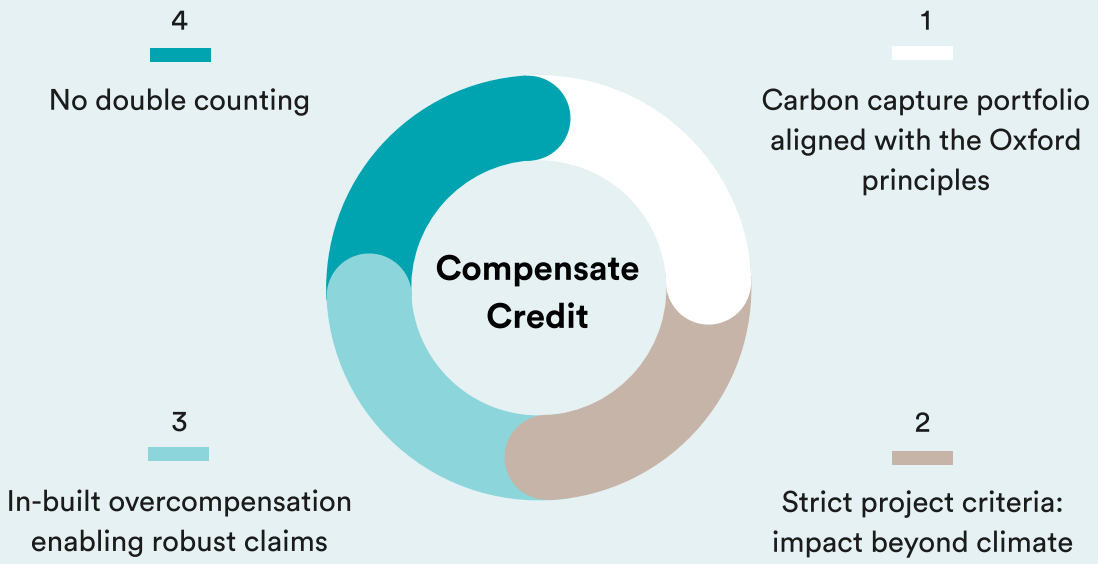
Compensate makes sure that buyers of the Compensate Credit can make a credible compensation claim. This requires avoiding double counting.

Double counting refers to a situation where two parties claim the same carbon removal or emission reduction.

Commonly, the two claiming parties are an organisation offsetting its emissions and the host country of the project trying to reach its nationally determined contribution (NDC), or climate target, under the Paris Agreement.

Compensate avoids double counting by selecting projects in countries that apply so-called corresponding adjustments for credits sold on the voluntary carbon market. For the time being Compensate also uses pre-2020 credit vintages that are not affected by the Paris Agreement carbon accounting rules. Compensate can also select projects that operate in sectors where that host country does not have mitigation targets.

The Compensate credit is a new type of carbon credit that is built on four key elements:



1 A “meta-credit” built with a portfolio of carbon projects

- Risks related to especially nature-based projects are mitigated by a large portfolio of projects (typically 10-12 projects).
- Consists mostly of Gold Standard and Verra certified projects, but also smaller standards like Plan Vivo and Puro.Earth.
- Dynamic portfolio that is aligned with the Oxford Principles of Net Zero Aligned Offsetting. The portfolio currently consists of 50% carbon removal projects and 50% avoided emissions projects.
- 20% of projects are innovative solutions to carbon removal, thus supporting innovation and new technologies to enter the market.

2 Strict project criteria

- All projects meet Compensate's strict project evaluation criteria related to climate integrity, biodiversity, social justice, and human rights.
- Through diverse project types, the Compensate credit supports all the Sustainable Development Goals of the United Nations.

3 In-built overcompensation enabling robust claims

- Compensate's project evaluation criteria are used to score each project to determine the necessary overcompensation for that project.
- The share of each project is based on its climate impact score: providing the best impact-cost ratio.

4 No double counting

- Projects are located in countries that apply corresponding adjustments for credits sold to the voluntary carbon market,

or

- Compensate uses credit vintages that are not affected by the Paris Agreement carbon accounting rules,

or

- Projects are in sectors where that host country does not have mitigation targets.

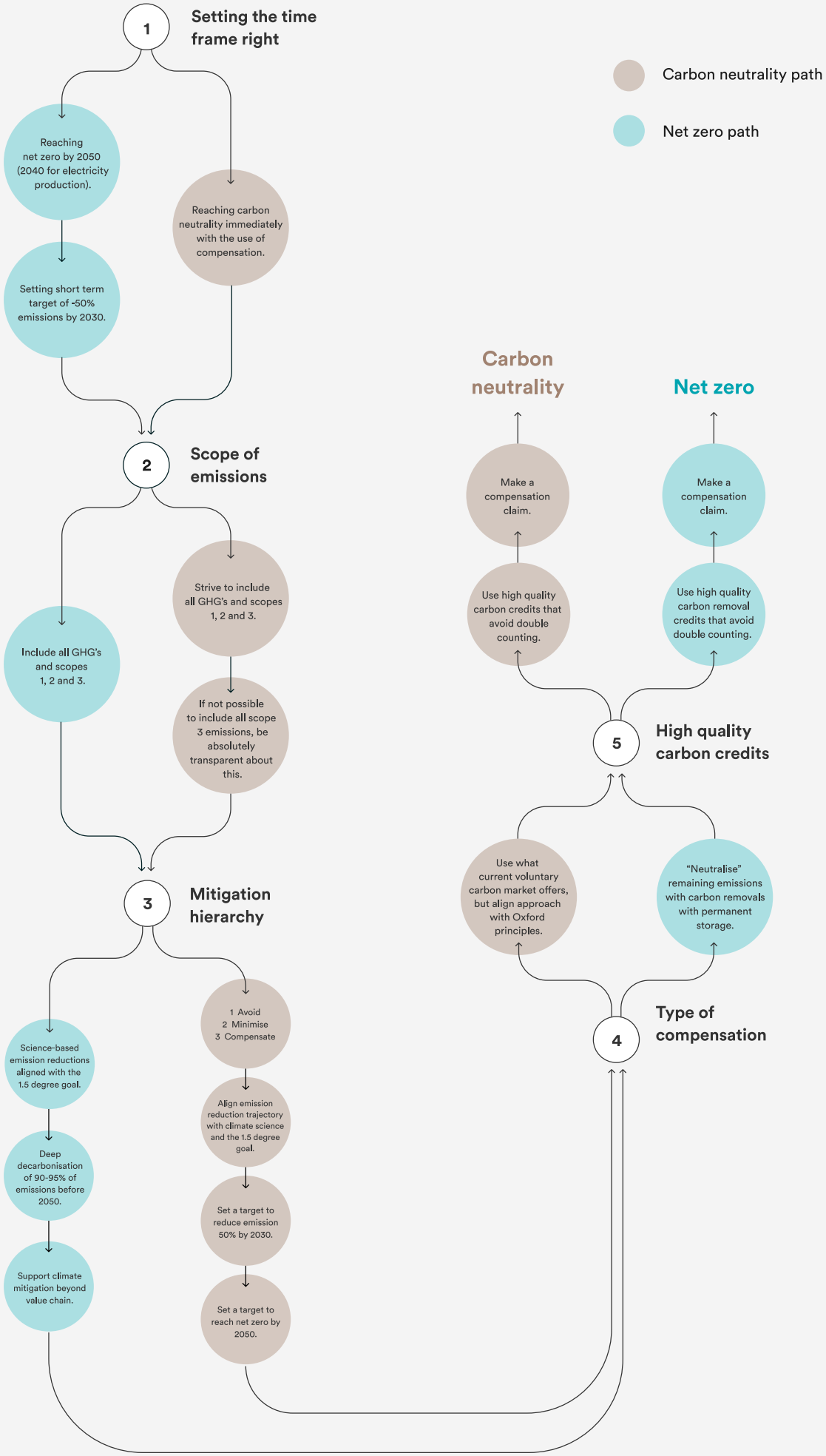
↓ Next: **6 Summary**

6

Summary

Summary:
Pathways to net zero and carbon neutrality

As this white paper has illustrated, making a net zero or carbon neutrality claim requires answering five key questions. If companies make high integrity choices when answering these questions, it will open up a pathway to a credible claim. These pathways are summarised in the following graph.


Carbon neutrality path
Net zero path
1
Setting the time frame right
Reaching net zero by 2050 (2040 for electricity production).
Setting short term target of -50% emissions by 2030.
Reaching carbon neutrality immediately with the use of compensation.
2
Scope of emissions
Include all GHG's and scopes 1, 2 and 3.
Strive to include all GHG's and scopes 1, 2 and 3.
If not possible to include all scope 3 emissions, be absolutely transparent about this.
3
Mitigation hierarchy
Science-based emission reductions aligned with the 1.5 degree goal.
Deep decarbonisation of 90-95% of emissions before 2050.
Support climate mitigation beyond value chain.
1 Avoid
2 Minimise
3 Compensate
Align emission reduction trajectory with climate science and the 1.5 degree goal.
Set a target to reduce emission 50% by 2030.
Set a target to reach net zero by 2050.
Carbon neutrality
Net zero
Make a compensation claim.
Make a compensation claim.
Use high quality carbon credits that avoid double counting.
Use high quality carbon removal credits that avoid double counting.
5
High quality carbon credits
Use what current voluntary carbon market offers, but align approach with Oxford principles.
"Neutralise" remaining emissions with carbon removals with permanent storage.
4
Type of compensation

7

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Sources and further reading

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