



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

FOUNDATIONS FOR SCIENCE-BASED NET-ZERO TARGET SETTING IN THE FINANCIAL SECTOR

VERSION 1.0
April 2022



WORLD
RESOURCES
INSTITUTE



Version	Release date	Purpose	Updates on earlier version
0, SBTi FI Net-Zero Foundations Draft	10/11/2021	Draft for public comment	NA
1, SBTi FI Net-Zero Foundations	04/12/2022	Serves as basis for net-zero standard development	Revisions based on public consultation results

FOUNDATIONS FOR SCIENCE-BASED NET-ZERO TARGET SETTING IN THE FINANCIAL SECTOR

Version 1.0 | April 2022

Financial institutions (FIs) have started to focus on net-zero as the guiding concept for their climate mitigation ambition. However, a lack of consistent principles, definitions, metrics, and evidence of effective strategies to meet net-zero targets limits the ability of FIs to support the reduction of emissions in the real economy that is needed to stabilize temperatures at 1.5°C above pre-industrial levels. In this foundations paper, the Science Based Targets initiative (SBTi) provides principles, definitions, metrics, and target formulation considerations for FIs to set quantitative net-zero targets linked with emissions reductions in the real economy.

CONTENTS

EXECUTIVE SUMMARY.....	4
1 INTRODUCTION.....	14
2 THE NET-ZERO FINANCE LANDSCAPE.....	18
3 SBTi NET-ZERO GUIDING PRINCIPLES.....	27
4 ESTABLISHING A COMMON DEFINITION OF NET-ZERO FOR FINANCIAL INSTITUTIONS	31
5 NET-ZERO STRATEGIES & METRICS.....	34
6 TARGET FORMULATION AND TRACKING.....	42
7 DISCUSSION AND PRELIMINARY CONSIDERATIONS.....	51
8 NEXT STEPS.....	54
9 GLOSSARY.....	56
10 REFERENCES.....	58

EXECUTIVE SUMMARY

Highlights

- The scientific community has clearly stated the need to reach net-zero global CO₂ emissions by mid-century to limit global warming to 1.5°C and to reduce the destructive impacts of climate change on human society and nature.
- As public awareness of the need to reach net-zero emissions at the global level has grown, the number of financial institutions committing to and setting net-zero targets has increased rapidly.
- The SBTi has pioneered the translation of climate science into a framework that allows companies to set ambitious climate targets, culminating in the publication of the Corporate Net-Zero Standard in October 2021.
- With net-zero commitments now forming a core part of FIs' climate strategies, there is a pressing need to develop a common understanding of what net-zero means for financial institutions to ensure that the targets are consistent with the action needed to reach net-zero emissions at the planetary level in line with societal climate and sustainability goals.
- Acknowledging this need, the SBTi is developing a science-based framework for the formulation and assessment of net-zero targets in the financial sector.
- This paper represents the first step in the net-zero standard development process for financial institutions. It provides the initial conceptual foundations that will be translated into specific criteria and guidance following a transparent and balanced multi-stakeholder process.

Context

The Intergovernmental Panel on Climate Change (IPCC) Special Report on 1.5°C provided a widely accepted warning that in pathways that limit global warming to 1.5°C, the world needs to

halve carbon dioxide (CO₂) emissions by around 2030 and reach net-zero CO₂ emissions by mid-century, accompanied by deep cuts to non-CO₂ greenhouse gas (GHG) emissions. The report defines the net-zero state as the point when “anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.”

To decarbonize the global economy in alignment with the goals established by the Paris Agreement, all economic actors need to reduce their GHG emissions at a rate sufficient to remain aligned with the mitigation pathways established by climate science. The central enabling role of the finance sector is recognized in the Paris Agreement, which contains language in [Article 2.1\(c\)](#) on “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” FIs have a unique influence over other actors in that they provide capital and services to companies with responsibility for reducing their GHG emissions, rather than exercising direct control over any major sources of GHG emissions reductions. It is thus critical for FIs to help drive Paris-aligned systemic decarbonization by leveraging their shared influence and responsibility for aligning incentives and eliminating barriers to emission reductions.

Almost 90% of global emissions and GDP are currently [covered](#) by net-zero commitments. The Glasgow Financial Alliance for Net-Zero (GFANZ) has brought together several net-zero alliances to help drive high-level net-zero commitments. As of November 2021, these net-zero alliances have helped shape many of the initial commitments of FIs, bringing together over 450 financial firms from 45 countries.

Our review of the financial net-zero landscape to date finds that target setting differs across dimensions such as the range of financial services that are covered and how FIs are planning to achieve their target. FIs are using a combination of different strategies to decarbonize their portfolios and invest in new climate solutions such as renewable energy and carbon dioxide removal technologies. However, without a common understanding, today’s varied net-zero target-setting landscape makes it difficult for stakeholders to compare goals and to evaluate whether the actions being taken by FIs are sufficient to achieve a global net-zero economy by 2050 in line with limiting global warming to 1.5°C this century.

About This Paper

This paper provides a conceptual foundation for setting and assessing FI net-zero targets. The intention of this paper is to provide clarity on key concepts, rather than a definitive set of criteria or detailed guidance. Some of the key questions explored in this paper include:

- What does it mean for an FI's actions to be consistent with net-zero?
- How should FIs address their financed emissions?
- What role do carbon credits play in FI net-zero targets?
- How should fossil fuel financing be addressed in FI net-zero targets?
- How should climate solutions be addressed in net-zero targets?
- How should SBTs complement net-zero targets?

In 2020, the SBTi published criteria and guidance for FIs to set near-term science-based targets (SBTs) that cover their investment and lending portfolios. FIs are now using this guidance and criteria to develop their SBTs and have them validated by the SBTi. In October 2021, the SBTi published the SBTi Corporate Net-Zero Standard which provides guidance, criteria, and recommendations for companies to set net-zero targets through the SBTi.

This new foundations paper builds on the SBTi Finance Guidance and Criteria as well as the SBTi Corporate Net-Zero Standard by presenting guiding principles, a definition of net-zero for FIs, metrics and target formulation considerations such as fossil-fuel financing and use of carbon credits.

The content of this paper was developed through a multi-stakeholder consultation process. In early November 2021, the SBTi shared the working paper and hosted two public workshops introducing the SBTi's principles to inform FI net-zero targets. The SBTi received more than 130 written responses and recorded a variety of perspectives obtained via follow-up meetings with representatives from companies, NGOs, academia, and financial institutions. The results are summarized [here](#).

This paper aims to create alignment across the financial community with common language and concepts for net-zero target-setting. The goal is to build a growing group of FIs that transparently, quantitatively, and robustly support the emissions reductions in the real economy needed for climate stabilization. The paper does not represent a definitive set of criteria or guidance but, rather, a first step in the process of developing a Net-Zero Standard for FIs.

Key questions explored in this paper

What does it mean for an FI's actions to be consistent with net-zero?

This paper has introduced four guiding principles that help ensure that FI net-zero targets are consistent with the action needed to reach net-zero emissions at the planetary level in line with societal climate and sustainability goals. Acknowledging this, for FIs' targets to be compatible with reaching net-zero emissions at the global level, two conditions must be met:

- 1. Align all financing with pathways that limit warming to 1.5°C with no or limited overshoot.*
- 2. Neutralize residual emissions through the financing of activities that permanently remove an equivalent amount of atmospheric carbon dioxide.*

Being consistent with the global net-zero goal should therefore be considered a state where all of an FI's financing activities are aligned with reaching this goal. The focus should not lie on reaching a state of net-zero GHG emissions within portfolios but instead, ensuring that net-zero targets incentivize FIs to sufficiently contribute to help achieve the global goal of net-zero emissions at a planetary level.

The conditions for FIs to make claims of "achieving" a state of net-zero or reaching a state of net-zero "alignment" require further research. These issues are largely dependent on the methods and metrics FIs use to track progress towards these goals which will be finalized as part of the wider net-zero standard development process.

How should FIs address their financed emissions?

A review of the net-zero target-setting landscape reveals that FIs are using many tactics to get to net-zero, including reducing portfolio exposure to GHG emissions, engaging companies to set GHG reduction targets, and investing in climate solutions to help the wider economy reduce emissions. Achieving a state of net-zero emissions at the planetary level will require real world cuts in GHG emissions from companies' value chains, and not simply a reduction in exposure to emissions within portfolios. For FIs to contribute to the global net-zero goal, reducing financed emissions should not occur at the expense of financing the transition in the wider economy. Rather than simply reducing portfolio exposure to GHG emissions, net-zero targets for FIs should incentivize engagement with portfolio companies to reduce their own emissions consistently with relevant 1.5°C pathways by setting science-based net-zero targets.

A forward-looking approach can help ensure the necessary transition finance to all companies that have signalled their intention to decarbonize, regardless of their sector or current GHG emission footprint. For companies that are unable or unwilling to transition, however, FIs can discontinue the financing relationship.

What role do carbon credits play in FI net-zero targets?

Under the SBTi Corporate Net-Zero Standard, companies are not able to purchase carbon credits as a replacement for reducing value-chain emissions in line with their science-based targets - this is often referred to as "offsetting". However, investment in mitigation outside the corporate value chain ("beyond value chain mitigation") is recommended to support societal net-zero goals, and high-quality carbon credits may contribute towards this. In addition, any residual emissions that remain when reaching corporate long-term science-based targets must be neutralized with permanent removals to reach net-zero; these removals may be sourced from carbon credits.

FIs are expected to follow this standard for operational emissions (scope 1 and 2) and value chain scope 3 emissions (categories 1-14). When addressing scope 3 category 15 financed emissions, FIs should prioritize opportunities within their core business through direct financing of climate solutions, rather than the purchase of carbon credits.

Two broad approaches are outlined for how FIs can support permanent emission removals to aid the development of carbon sinks, either by 1) supporting portfolio companies to neutralize their residual emissions or 2) achieving a balancing of positive and negative financed emissions via direct financing of carbon removal activities that neutralize residual financed emissions.

The net-zero standard development process will explore how this position could evolve for FIs to ensure that net-zero targets can incentivize the necessary financing for carbon removal solutions and to ensure that FIs can make credible claims when aligning to global net-zero goals.

[How should fossil fuel financing be addressed in FI net-zero targets?](#)

The combustion of fossil fuels continues to be the largest source of GHG emissions and the central driver of climate change. Extensive reduction in the production and use of fossil fuels is essential to achieving a net-zero economy and avoiding the catastrophic consequences of climate change. A necessary step for FIs seeking to set net-zero targets is to transparently address the role of fossil fuels in their financing activities. As with other financial institution holdings, the SBTi believes that engagement is the priority for FIs to reduce fossil fuel company GHG emissions. A disclosure, transition, and phase-out approach has been developed for further consideration and elaboration.

This approach is intended to advance 1.5°C engagement and only advocates the phase-out of financing for fossil fuel companies unable or unwilling to transition. FIs should start by **disclosing** fossil-fuel related financing activities, and then engage with fossil-fuel companies to adopt net-zero targets and action plans, with divestment for companies that are unable or unwilling to **transition** in line with net-zero pathways. There should be a final **phaseout** of

financial support to existing coal assets by 2030 and to existing oil and gas assets by 2040, for all companies who are not on credible transition pathway.

As the SBTi works on finalizing a detailed oil and gas sector target-setting method, the disclose, transition, and phase-out approach is intended to guide FIs' net-zero target formulations.

How should climate solutions be addressed in net-zero targets?

FIs have an important role to play in scaling up investments in new and existing climate solutions such as renewable energy, sustainable mobility, infrastructure, nature-based solutions for the conservation and enhancement of natural sink capacities and carbon removal technologies. The financing of climate solutions also serves as an important tactic for FIs to showcase their contribution to net-zero goals. The standard development process will also explore recognizing the importance of finance in addressing climate change in the coming decade, and target setting options for directing finance towards nature-based climate solutions that secure and enhance carbon sinks, to avoid the emissions that arise from their degradation. There is also a critical need for FIs to invest in nascent GHG removal technologies, for example direct air capture (DAC) and geological storage, so that the technology is available to neutralize residual emissions to reach net-zero at a planetary level.

The definition and quantification of ambition regarding the rate of financing for climate solutions remains uncertain. Science-based ambition has traditionally been defined in terms of rate of change of emissions reductions and not rate of change of finance for new solutions deployment. Questions around if and how climate solution financing can be addressed with net-zero targets will continue to be examined as part of the framework development.

Avoided emissions has been proposed as a metric to track progress, but the numerous GHG accounting challenges and drawbacks mean this is still not viewed as a credible option for consistent, transparent, science-based net-zero targets. In addition, a range of new green metrics have emerged based on taxonomies such as from the EU Commission and the Climate Bonds Initiative. While these metrics are attractive for reallocating finance from brown to green

activities, future work is needed to determine how to establish a science-based target ambition that is linked to global climate goals.

How should SBTs complement net-zero targets?

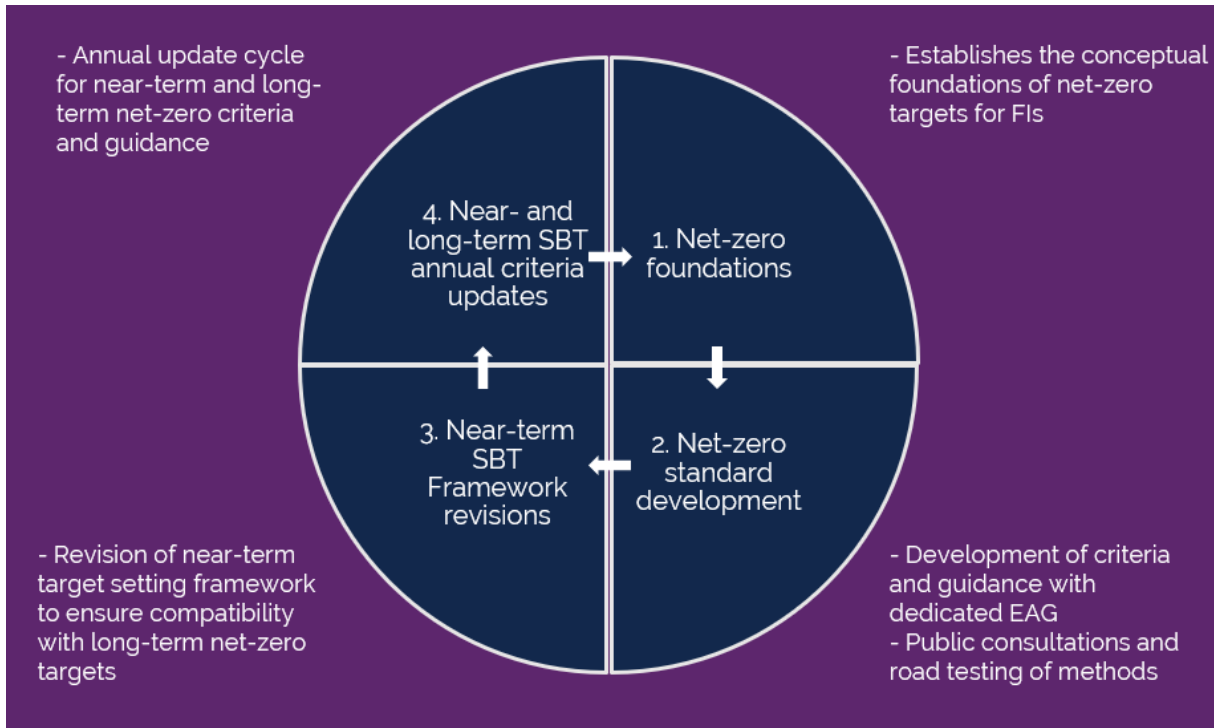
Science-based emissions reduction targets ensure that FIs address relevant sources of financed emissions through sector-based physical intensity or engagement-oriented methods in the near-term. Science-based net-zero targets are expected to go beyond FI's near-term SBTs to clarify how FIs can do their part to achieve a net-zero economy. As with the SBTi Net-Zero Corporate Standard, near-term SBTs are expected to make up one essential element of an FI's overall net-zero target.

Process to develop the SBTi Finance Net-Zero Standard

This paper represents the first step in developing a science-based, net-zero standard for FIs. The SBTi plans to build on this paper with a transparent and inclusive multi-stakeholder process for developing target validation criteria, detailed guidance, and technical resources to support FIs with the development and implementation of science-based net-zero targets.

While the financial sector plays a different role to the corporate sector in achieving net-zero emissions, the forthcoming standard will be informed by, and aligned with, the SBTi Corporate Net-Zero Standard (SBTi. 2021a).

Figure 1. SBT FINZ process development



Following the publication of this paper, the SBTi intends to develop the following outputs through a robust and transparent process:

- **Criteria** for the formulation of science-based net-zero targets in the financial sector;
- A **validation protocol** to assess net-zero targets against the set of criteria to be developed as part of this process;
- Detailed **guidance** for science-based net-zero target setting in the financial sector, including guidance for credible claims.

To support the next phase of this process, further research and consultation is planned to address some of the key technical questions, including:

- **Definitions:** how should the net-zero definition and mitigation strategies apply to different types of FIs, given their different abilities to influence and drive emission reductions in the real economy? How can different types of financing activities be captured in the boundary of a net-zero target?
- **Climate solutions:** what is the role of climate solutions in net-zero targets, specifically as they relate to metrics and how the rate of climate-solution financing could be tied to science-based scenarios?
- **Carbon credits:** how are the use of carbon credits and direct financing of potential carbon credit generating activities related to net-zero claims across an FI's operations and financing activities?
- **Fossil fuel financing:** how can the proposed disclosure, transition, and phase-out approach be addressed in net-zero targets?
- **Net-zero claims:** What are the conditions that an FI needs to meet to claim that they are aligned with global net-zero goals?
- **Interim targets:** how should the near-term target setting framework for FIs evolve to ensure that it is fully consistent with the net-zero target framework?

1 INTRODUCTION

The scientific community has consistently warned that the accumulation of anthropogenic GHG emissions in the atmosphere is the main cause of observed and projected increases in global mean surface temperature (IPCC 2019). As such, to reach a state in which human activity no longer contributes to global warming means achieving a state in which anthropogenic GHG emissions no longer accumulate in the atmosphere.

To decarbonize the global economy in alignment with the goals established by the Paris Agreement, all economic actors in the real economy must reduce their GHG emissions at a rate sufficient to remain aligned with the mitigation pathways established by climate science. Corporate emissions do not occur in a vacuum, but rather within a broader economic and regulatory system that creates a complex web of incentives and disincentives for economic actors to reduce emissions. In many ways, all actors across a given value chain and those connected through policy and other incentives share influence over the direct emissions of each actor and, therefore, share responsibility for reducing them.

FIs have a unique influence over other actors in that they provide capital and services to companies that have a responsibility for reducing their own value chain GHG emissions. Because of this, they do not exercise direct control over any major sources of GHG emissions reductions, but rather they possess great influence over companies that do.

It is critical for FIs to help drive Paris-aligned systemic decarbonization by leveraging their shared influence and responsibility for aligning incentives and eliminating barriers to emissions reductions. FIs can have a real impact on limiting climate change by providing capital, guidance, and climate-linked products to support transition activities. In fact, the central enabling role of finance is recognized in the Paris Agreement, which contains language in Article 2.1(c) on “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.”

1.1 The need for a common understanding of net-zero in the financial sector

In recent years, the importance of limiting global temperature rise to 1.5°C above pre-industrial levels and reaching net-zero CO₂ emissions by 2050 as the best chance of avoiding catastrophic climate breakdown has become increasingly clear. Against this backdrop, there has been a significant response from corporations, countries, cities, and other actors announcing public net-zero commitments.

Under the Race to Zero campaign, the Glasgow Financial Alliance for Net-Zero (GFANZ) has brought together a number of new net-zero alliances to help drive high-level commitments, as well as to establish some ground rules as to what net-zero targets should mean for particular types of FIs. These net-zero alliances have helped to shape many of the initial commitments from FIs, bringing together over 450 financial firms from across the financial system to accelerate the transition to net-zero emissions by 2050 or earlier (GFANZ, 2021).

Over 100 FIs have also now committed to setting SBTs through the SBTi. These institutions will begin with setting near-term, Paris-aligned targets across their operations and portfolios that place them on the pathway to net-zero. There is now a need to clarify how these near-term targets relate to the state of net-zero.

The number of FIs committing to reach net-zero emissions has grown rapidly in recent years, but without adhering to a common definition, net-zero targets can be inconsistent, and their collective impact is limited. The resulting varied net-zero target-setting landscape makes it difficult for stakeholders to compare goals, assess progress, and evaluate the credibility of FIs' efforts to achieve net-zero, and a common understanding is now needed.

1.2 Audience for this paper

The SBTi defines a financial institution as a company whose business involves the arrangement and execution of financial and monetary transactions, including deposits, loans, investments,

currency exchange, and insurance. More specifically, the SBTi deems a company to be an FI if 5 percent or more of its revenue or assets comes from activities such as those just described.

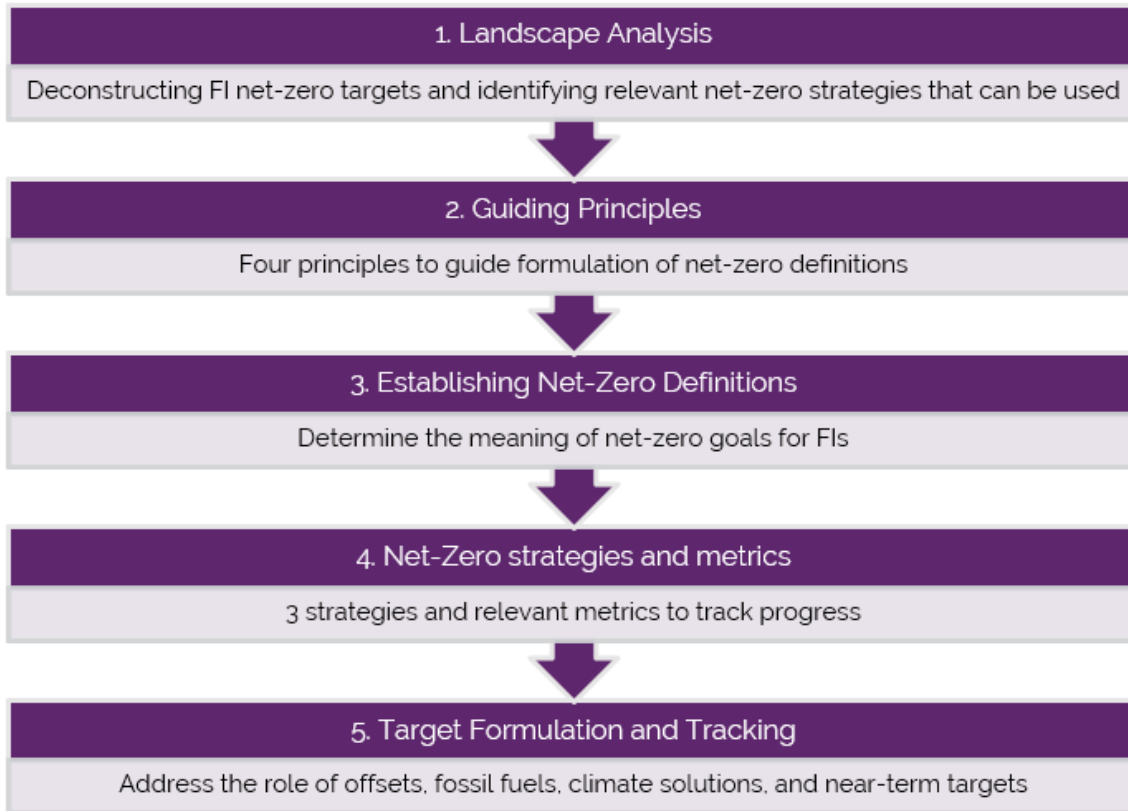
As this net-zero foundation paper seeks to create alignment across the financial community, the primary audience includes banks, asset managers, asset owners, insurance companies, and the wider climate finance ecosystem. The net-zero framework is also relevant for other FIs, for example, mortgage real estate investment trusts (REITS), that have holdings in asset classes where methods are available under the current SBTi framework.

1.3 Purpose of this paper

This paper intends to provide a conceptual foundation and clarity on key concepts, rather than a definitive set of criteria or detailed guidance for financial net-zero targets. For example, specific thresholds in terms of which/when activities are relevant and emissions boundaries will not be established in this paper, but during the subsequent net-zero standard development process. This paper will instead focus on principles, definitions, and transition metrics that can be used to construct long-term net-zero targets. Target formulation and tracking elements, such as the treatment of fossil-fuel financing and carbon credits, are also addressed in a wider discussion of key topics.

This paper builds on earlier work by the SBTi for defining net-zero for companies in the real economy through the [SBTi Corporate Net-Zero Standard](#). The net-zero framework for corporates has helped to establish the fundamental knowledge for net-zero target setting that is used in this paper. For the net-zero framework for FIs, the SBTi is taking a holistic look at all aspects of target setting to establish best practices for principles, definitions, metrics, and target components specific to the financial sector. Figure 2 presents the five-level framework used in this paper to construct a clear and consistent foundation for understanding net-zero targets for FIs.

Figure 2. Process to net-zero Foundations Paper



Source: Authors

Developing a science-based net-zero standard for target setting at the level of an individual FI requires some normative decisions that do not directly emerge from climate science. Recognizing this, the SBTi will build on this paper with a transparent and inclusive multi-stakeholder process to develop actionable target validation criteria, detailed guidance, and technical resources to support FIs with the formulation and implementation of science-based net-zero targets.

2 THE NET-ZERO FINANCE LANDSCAPE

Since the IPCC released the *Special Report on Global Warming of 1.5°C* in 2018, there has been a surge in the number of net-zero targets from national and sub-national actors. A growing number of companies are publicly committing to net-zero, and the number of pledges from FIs has risen rapidly. This landscape assessment reviews existing net-zero target formulations to facilitate the understanding of net-zero in the financial sector.

2.1 How different financial services influence target setting

FIs have the ability to use their relationships with clients and influence as shareholders or creditors of issuers and consumers to drive decarbonization across the economy and help provide the financing necessary for the net-zero transition. However, one reason for the variation in net-zero target formulations thus far is the diverse relationships and services offered by different types of FIs, which can affect the manner in which FIs can set transition plans and achieve a net-zero goal. Moreover, FIs deal with different mixes of asset classes, sectors, geographies, and individual companies, each of which may follow different decarbonization trajectories.

For example, **banks** arrange financing to companies through loans or from capital markets. They can thus consider net-zero alignment in their decision-making process and proactively direct financing toward projects or companies with alignment plans. However, banks may only be able to transition their loan portfolios slowly, at least in the near term, since this service may anchor client relationships and enable the offering of additional products or services over the longer term. Declining to roll over loans to aid portfolio decarbonization may end the client relationship and preclude any further engagement to support the client's decarbonization journey.

Investors, on the other hand, may have the ability to transition their portfolios more quickly due to their ability to buy and sell investments based on the portfolio issuers' transition plans,

although this can often transfer responsibility to another investor. The amount of control (e.g., voting rights), type of investment mandate, and investment time horizon can also contribute to the level and timeframe of net-zero goals that are pursued.

Asset managers direct financing through their selection of investments. They can thus consider the net-zero alignment of issuers in their investment decision-making process as well as engage clients, especially those who may not want their portfolio constrained by an overarching commitment, and proactively steer them towards net-zero aligned funds and investment products or services. Many asset managers also have an opportunity to use shareholder pressure and voting rights to compel change and endorse actions that drive decarbonization. **Private equity** firms in particular often have longer-term investment strategies and considerable influence over their portfolio companies. Minority shareholders can also wield similar influence, albeit through often engaging other shareholders. In contrast, creditors do not have voting rights but can still unilaterally or collaboratively (e.g., with shareholders and/or other creditors) engage companies through the syndicate and management, such as on how particular issues affect their decision to invest and at what price.

Similarly, **asset owners** direct financing through their selection of investments but also through their selection of asset managers. They can thus incorporate net-zero targets into their investment portfolios as well as mandates awarded to asset managers. Asset owners therefore have opportunities to use shareholder pressure and other forms of engagement directly and/or through their asset managers. As large investors in financial markets, **insurance companies** are one type of asset owner that can take such actions. Their insurance underwriting portfolios present another channel to incorporate net-zero targets, engage clients, and develop net-zero aligned services that is a forthcoming area of development.

Meanwhile, the wider climate finance ecosystem also includes **financial service providers** such as data providers, stock exchanges, consultancies, and rating agencies, that provide various services to FIs. Areas of further work for financial service providers include setting net-zero targets on their operations as a corporate, their potential influence and engagement with

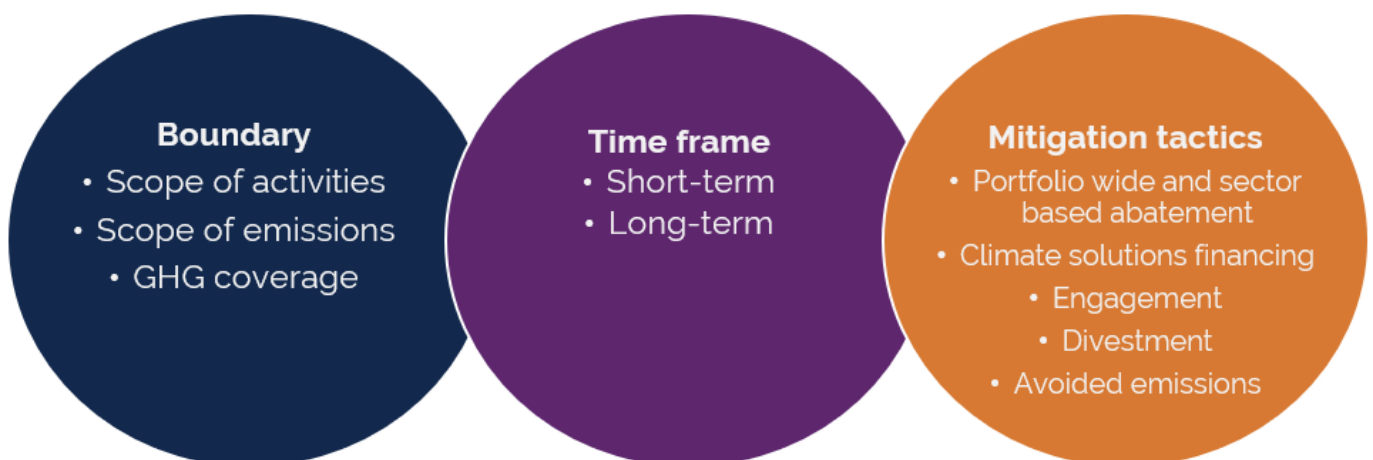
FIs, and the development and alignment of products and services to support FIs in achieving their net-zero goals.

2.2 Deconstructing “net-zero” in the finance sector

While the momentum around net-zero commitments and the mobilization of ambitious action in the financial sector are encouraging, the concept of net-zero has not been crystallized. Upon examination, significant differences can be found among FI net-zero target formulations. While many FIs focus on achieving a state of net-zero financed emissions within their portfolios by 2050, there is currently no consistent definition based on the available science of what it means for an FI to be “net-zero” or how credible net-zero targets should be constructed. In their current state, it is unclear what the implications of these targets will be for the real economy and whether their culmination will be enough to align with the goals of the Paris Agreement.

The landscape assessment conducted by the SBTi found that net-zero target formulations for FIs differ across three key dimensions: the boundary of the target; the timeframe to achieve the target; and the mitigation strategy that the FI will follow to achieve the target (Figure 3).

Figure 3. Key dimensions in FI net-zero targets



Source: Authors

Target Boundary

The first key aspect of FI net-zero targets is the range of activities and emissions covered within the boundary of the target. The target boundary determines whether an FI is committed to addressing all relevant sources of emissions across its operational and financing activities. An overview of four issues in net-zero target boundaries is presented in Table 1.

Table 1. Boundary components of net-zero target formulations

Boundary Issue	Description
Scope of activities	<p>FI net-zero targets currently encompass a wide range of emission scopes and financing activities. . Targets can cover scope 1 and 2, and various categories of scope 3, including category 15 financed emissions. Many FIs set separate net-zero goals for different scopes, e.g., net-zero in scope 1 and 2 by 2030 and across all activities (including financing) by 2050.</p> <p>The range of financing activities and asset classes that are covered varies across existing net-zero targets. For example, many banks set targets only on their loan and investment activities, though some include off-balance sheet activities like capital market services. Meanwhile, asset managers may only focus on certain funds depending on their investment mandates. The creation of various net-zero aligned financial products and services are also being considered for inclusion in net-zero targets.</p>
GHG coverage	<p>FIs are setting net-zero, climate neutral, and carbon neutral targets that can cover a range of GHGs. The coverage of different GHGs in the commitments is typically not clear e.g., just CO₂ or all GHGs.</p>
Scope coverage of the FI's portfolio companies	<p>An FI's net-zero target can cover just the scope 1 and 2 emissions of its portfolio companies or all scope 1, 2, and 3 emissions of the portfolio companies. Many targets are unclear about the coverage of the portfolio companies' GHG inventory. Scope 3 emissions are often only included for</p>

a subset of sectors (e.g., oil and gas, transportation). Other formulations simply focus on covering the most material assets or a significant majority of financed emissions.

Source: Authors

Target Timeframe

Another key dimension that defines the ambition and implications of FI net-zero targets is their timeframe. Unlike GHG emissions reduction targets, which are usually formulated expressing the expected change in emissions between a base year and target year, FI net-zero targets are often formulated as long-term targets aiming to reach a state of net-zero emissions by no later than 2050.

In the current net-zero landscape, FIs are setting both long-term net-zero (2050 or earlier) and near-term targets. Many of the existing net-zero initiatives highlight the need to have shorter-term targets focused on emissions abatement. For example, the Net Zero Banking Alliance signatories' [pledge](#) sets a 2030 (or sooner) target (UNEP-FI 2021). Similarly, the Net Zero Asset Owner Alliance [commitment](#) requires members to publish interim targets every five years starting in 2025 (NZAOA 2021).

Mitigation tactics and strategies

Perhaps the most important aspect that differentiates financial sector net-zero targets is the strategy that FIs intend to take to achieve their targets. Most FI strategies for climate change mitigation involve a combination of tactics that may change over time and that result in different mitigation outcomes. Some of these tactics help reduce the impact of an FI's activities on the climate, while others may contribute to society's transition to net-zero without reducing the climate impact of an FI's activities. Several examples of mitigation tactics are described (in no particular order) in Table 2.

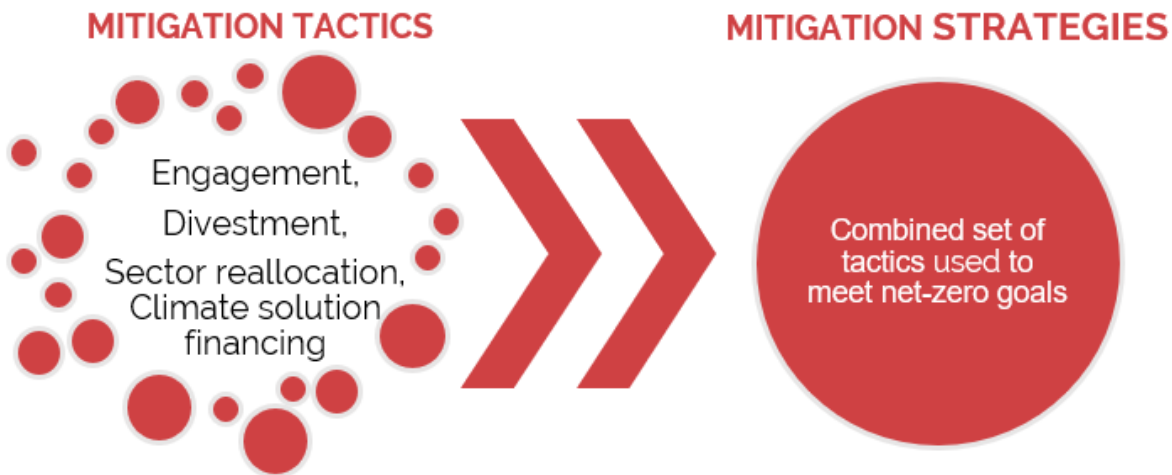
Table 2. Examples of FI mitigation tactics

<p><i>Engagement</i> with portfolio companies to influence them to set targets and transition plans to reduce their emissions over time.</p>
<p><i>Reallocation within sectors</i> to tilt a portfolio toward more efficient companies within each sector.</p>
<p><i>Exclusion policies</i> such as to not finance any company or project involved in the extraction of fossil fuels, or that derive a certain percentage of revenue from thermal coal.</p>
<p><i>Divestment</i> of persistently high-emitting companies, and/or emitting companies who lack credible transition plans, to reduce exposure to stranded asset risk.</p>
<p><i>Sector reallocation</i> from high carbon-intensity sectors, such as materials and energy, to lower carbon-intensity sectors like services.</p>
<p><i>Climate-solution financing</i> to activities that actively contribute to global climate goals and can be broadly defined as green technologies, often following established taxonomies. Three common examples are:</p> <p><i>Renewable energy financing</i>, which includes financing for companies and projects to generate renewable energy. FIs sometimes use the avoided emissions from these activities to claim compensation for other financed emissions.</p> <p><i>Green infrastructure financing</i>, which includes financing for companies and projects that reduce energy demand by providing shared access to transportation, improvements to building efficiency, and other actions.</p> <p><i>Carbon removal financing</i> funds efforts to permanently remove carbon from the atmosphere. Removal activities include direct air capture (DAC), bioenergy with carbon capture and storage (BECCS), and nature-based solutions (NBS). These activities focus on carbon dioxide removal and not avoided emissions. Under the SBTi Corporate Net-Zero Standard, companies with residual emissions within their value chain are required to neutralize those emissions with an equivalent amount of carbon dioxide removals at their net-zero target date.</p>

Source: Authors

These mitigation tactics are not mutually exclusive and can be combined to become building blocks of broader strategies to achieving net-zero targets as illustrated by Figure 4.

Figure 4. Example of relationship between mitigation tactics and strategy



Source: Authors

Table 3 describes five hypothetical FI mitigation strategies that can lead to different outcomes for the FI itself, for society, and for the climate. These represent approaches being taken by FIs to neutralize their impact on the climate and make net-zero claims.

As a part of the five-level framework used in this paper (Figure 1), each FI mitigation strategy will be assessed later in this paper against the guiding principles outlined in Section 3 to help develop high-level considerations for the formulation of science-based net-zero targets. The strategies presented in this section do not represent recommendations from the SBTi nor an exhaustive list but, rather, reflect various configurations of approaches being used in today’s FI target-setting landscape.

Table 3. Examples of FI mitigation strategies

Mitigation Strategy	Description	Mitigation Tactics
Replacing financed emissions abatement with avoided emissions	Financed emissions are reduced at a scale that falls short of what can be considered Paris-aligned, and unmitigated financed emissions are intended to be addressed by avoided emissions associated with portfolio company products. This can occur within and across different asset classes.	Can include using climate-solution financing (besides carbon removal) in addition to some form of engagement or divestment policies
Replacing financed emissions abatement with carbon removal	Financed emissions are reduced at a scale that falls short of what can be considered Paris-aligned, and unmitigated financed emissions are balanced by an equivalent amount of GHG removal via financing of net-negative assets, e.g., negative emission technologies (CDR), net-negative companies or projects, or qualified nature-based solution projects.	Can include using carbon removal financing in addition to some form of engagement or divestment policies
Financed emissions abatement along 1.5°C pathways along with carbon removal	Financed emissions are reduced along 1.5°C pathways, at either a portfolio or sector level, and unmitigated financed emissions are balanced by an equivalent amount of GHG removals via financing of net-negative assets, e.g., negative emission technologies (CDR), net-negative companies, projects, or qualified nature-based solution projects.	Can include a broad combination of mitigation tactics to reduce financed emissions and increase carbon removals
Alignment of portfolio companies with net-zero standards	The share of financing is increased towards companies that are aligned with a net-zero pathway or standard to reach a state where each portfolio company has transitioned to a	Can include engagement, exclusion policies, divestment,

	net-zero status by aligning to a relevant 1.5°C pathway and neutralizing remaining residual emissions by an appropriate amount of CO ₂ removal.	and climate-solution financing
Contribution of portfolio activities to net-zero goals	The share of financing is increased towards climate solutions that contribute to meeting economy-wide net-zero goals	Can include climate-solution financing only or in addition to other decarbonization measures

Source: Authors

3 SBTi NET-ZERO GUIDING PRINCIPLES

Acknowledging the current diversity in net-zero commitments, this section proposes a set of principles to guide the formulation and assessment of net-zero targets in a way that ensures that these targets lead to a state compatible with achieving a net-zero economy by incentivizing and driving the action needed to meet societal climate and sustainability goals.

3.1 Completeness: Inclusion of all relevant activities and emissions

Achieving a state of net-zero GHG emissions at the global level implies deep reduction in GHG emissions and achieving a balance between the amount of GHGs released into and removed from the atmosphere as a result of human activity. To ensure that FI net-zero targets lead to a state that is compatible with reaching net-zero emissions at the global level, all operational and financing activities at a parent-level, over which FIs have influence, should be addressed. This should include scope 1, scope 2, and all relevant scope 3 GHG emissions, including category 15 emissions (which should cover portfolio companies' scope 1, 2, and 3 emissions). Although data availability can be an issue for target setting, this can be viewed as part of the engagement process with third parties to improve disclosure and transparency and ultimately to influence them to set targets.

Specific boundary thresholds, such as on the types of financing activities that should be covered, will not be established in this paper, but during the net-zero standard development process. For example, guidance on when an FI can be considered to have some influence over an asset or service (e.g., loan, investment, capital markets activities) will be elaborated in the net-zero standard.

Guiding Principle 1: All relevant operational and financing activities, and scope 1, scope 2, and scope 3 GHG emissions (which should cover portfolio companies' scope 1, 2, and 3 emissions) should be aligned with global net-zero goals.

3.2 Science-based Ambition: Align financing with most recent climate science

Different system transformations in 1.5°C mitigation pathways occur concurrently, and all of them are needed for society to reach net-zero emissions and limit warming to 1.5°C. An understanding of the synergies and trade-offs between different climate change mitigation pathways and sustainable development should also guide climate action.

Many such interactions exist. For example, different approaches to CO₂ removal are associated with sustainability trade-offs and in some cases opposition from civil society. To minimize these trade-offs, it is expected that FIs transition toward net-zero in line with mitigation pathways that are consistent with limiting warming to 1.5°C with no or low overshoot (e.g., P1 or P2 pathways of the IPCC special report on 1.5°C warming) and limited reliance on the deployment of carbon removals at scale. The SBTi's Pathways to Net-Zero provides supplementary technical information on how science-based target-setting methods have been developed in accordance with the best available climate science (SBTi 2021c). Pathways used by the SBTi aim to steer voluntary climate action and contribute to achieving the aims of the Paris Agreement and the Sustainable Development Goals, ultimately reaching net-zero CO₂ emissions at the global level by 2050, accompanied by deep reductions in non-CO₂ GHGs.

Guiding Principle 2: In accordance with the most recent climate science and best practices, FIs should transition and align their financing activities to net-zero in line with pathways that achieve the goal of the Paris Agreement to limit warming to 1.5°C with no or low overshoot, and the Sustainable Development Goals.

3.3 Real-Economy Impact

The actions that an FI takes to achieve portfolio emission reductions can have different outcomes on real world emissions depending on how they are implemented. While evidence of

various mitigation strategies' impacts is limited, real economy emissions reductions are a persistent end goal and guiding principle of net-zero target setting.

To help achieve this, the aim is to support and ensure that the users of financing (i.e., portfolio companies), which make up the real economy, transition to net-zero emissions. Net-zero targets should therefore help enable real-economy impact by providing transition finance to the companies that need this capital to decarbonize their business models. At the same time, FIs have different abilities to influence and engage the real economy given the different roles and services of different types of institutions. They will need to leverage these unique positions to incentivize and drive relevant actions that accelerate a net-zero transition in the real economy.

Although the main levers of influence may vary among FIs, they can be amplified when used together in collaboration with peers and other stakeholders. For example, FIs can discontinue financing companies that are unable or unwilling to transition, with clear public messaging such that the companies would find it increasingly difficult to access financing. Moreover, all types of FIs have a role in engaging policymakers to push and support policies and regulations that help drive broader climate actions across governments and industries to achieve a just transition.

Guiding Principle 3: FIs should leverage their abilities to influence and engage other actors as well as focus their financing activities to help achieve economy-wide decarbonization and a just transition, and not simply reduce portfolio exposure to GHG emissions.

3.4 Decarbonization and Climate Solutions

A net-zero emissions economy will require both the decarbonization of existing assets and the development of a range of climate solutions across all sectors. Both mature and emerging technologies are needed to ensure that all companies can reduce their value-chain emissions and effectively neutralize any residual emissions. As such, the financing of climate solutions complements emissions reduction efforts, rather than replacing or de-prioritizing them.

Accordingly, net-zero targets should incentivize the financing of both types of activities in each sector according to the levers available to an FI. For example, this could include investments or lending to decommission fossil-fuel activities or transition them to zero-carbon alternatives, as well as the financing of existing and new green technologies or activities.

Guiding Principle 4: The mitigation strategy used by an FI should promote the financing of decarbonization efforts along appropriate sector pathways while also financing the climate solutions necessary for a net-zero economy.

4 ESTABLISHING A COMMON DEFINITION OF NET-ZERO FOR FINANCIAL INSTITUTIONS

To inform how net-zero should be defined for FIs, it is useful to start with the planetary and corporate definitions developed by the IPCC and SBTi, respectively. In its 2019 report, the IPCC confirmed that in pathways that limit global warming to 1.5°C, CO₂ emissions are halved by around 2030 and reach net-zero by mid-century, accompanied by deep reductions in non-CO₂ GHGs (IPCC 2019).

IPCC Definition of Net-Zero

The IPCC defines net-zero as that point when “anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period” (IPCC 2019). The Paris Agreement sets out the need to achieve this balance by the second half of this century.

Therefore, achieving global net-zero goals will involve two types of actions: reduction in GHG emissions (along 1.5°C pathways) and increase in carbon sinks (technological and nature-based). The SBTi Net-Zero Standard defines how corporates can be consistent with this goal, by converging towards a state that is compatible with reaching net-zero emissions at the planetary level (see Box 2).

SBTi Definition of Corporate Net-Zero

Setting corporate net-zero targets aligned with meeting societal climate goals means (1) achieving a scale of value-chain emissions reductions consistent with the depth of abatement at the point of reaching global or sector net-zero in 1.5°C pathways and (2)

neutralizing the impact of any residual emissions by permanently removing an equivalent volume of CO₂.

Given the unique role of FIs in the economy, the guiding principles developed as a part of this paper inform the formulation of what a state of net-zero should mean for FIs such that their goals are consistent with the action needed to reach net-zero emissions at the planetary level.

Drawing from Guiding Principle 1 (Completeness), FIs should consider all relevant operational and financing activities when formulating net-zero targets. The transition and alignment of financing activities to such a state should be in line with pathways that meet Guiding Principle 2 (Science-based Ambition). It should also contribute to achieving the global net-zero emissions goal through FIs influencing and engaging other actors as well as financing the transition in the wider economy, in line with Guiding Principle 3 (Real-Economy Impact), which should drive FIs toward supporting both decarbonization and climate solutions, as per Guiding Principle 4 (Decarbonization and Climate Solutions).

SBTi Definition of Net-Zero for Financial Institutions

Based on the guiding principles introduced in this paper, it is proposed that being compatible with the global goal of reaching a state of net-zero emissions consistent with limiting warming to 1.5°C involves two conditions for financial institutions:

- 1. align all financing with pathways that limit warming to 1.5°C with no or limited overshoot, and*
- 2. neutralize residual emissions through the financing of activities that permanently remove an equivalent amount of atmospheric carbon dioxide.*

Being consistent with the global net-zero goal should therefore be considered a state where all FIs financing activities are aligned with reaching this goal. The focus lies not on reaching a state

of net-zero GHG emissions within portfolios but instead, ensuring that net-zero targets incentivize financial institutions to sufficiently contribute to help achieve the global goal of net-zero emissions at a planetary level.

The conditions for FIs to make claims of “achieving” a state of net-zero emissions or reaching net-zero “alignment” require further research. These issues are largely dependent on the methods and metrics FIs use to track progress towards these goals which will be finalized as part of the wider net-zero standard development process.

5 NET-ZERO STRATEGIES & METRICS

As described in Section 2, FI mitigation strategies usually consist of various combinations of tactics that can lead to different outcomes for FIs, but also for society and the climate. This section evaluates five hypothetical strategies against the guiding principles outlined in Section 3 and then briefly discusses common metrics that are being used to track the progress of these strategies.

5.1 Assessing the effectiveness of FI mitigation strategies

Table 4 presents a summarized assessment of the five hypothetical mitigation strategies. These strategies do not represent recommendations from the SBTi nor an exhaustive list but, rather, reflect various configurations of portfolio-mitigation approaches being used in today's FI target-setting landscape.

Table 4. Assessment of observed FI mitigation strategies

Mitigation strategy	Financed emissions abatement	Measures to balance unabated financed emissions	Principle 1: Completeness	Principle 2: Science-based ambition	Principle 3: Real-Economy Impact	Principle 4: Decarbonization and Climate Solutions
Replacing financed emissions abatement with avoided emissions	Financed emissions are reduced by an uncertain amount	Unabated financed emissions are balanced by avoided emissions from other financing activities	Avoided emissions accounting measures occur outside of value chain of portfolio companies	It is not clear that emissions are reduced at a sufficient rate	Limited incentive to engage portfolio companies to reduce emissions	Limited incentive to finance decarbonization activities

Replacing financed emissions abatement with carbon removal		Unabated financed emissions are balanced by an appropriate amount of CO ₂ removal	Yes	No, it's not clear that emissions are reduced at a sufficient rate		
Financed emissions abatement along 1.5°C pathways along with carbon removal	Portfolio wide or sector-based financed emissions are reduced at a rate consistent with 1.5°C mitigation scenarios	Unabated financed emissions are balanced by an appropriate amount of CO ₂ removal	Yes	Yes	Uncertain, only if done on a sector basis, by rebalancing to best performers and companies who have signaled their decarbonization goals	Yes, climate solutions financing will be necessary to achieve necessary sector-based emission reduction
Alignment of portfolio companies with net-zero standards	Financed emissions are aligned to 1.5°C mitigation scenarios	Unabated financed emissions are balanced by an appropriate amount of CO ₂ removal	Yes	Yes	Yes, rebalance to best performers and companies who have signaled their decarbonization goals	Uncertain, alignment approaches are most suited to decarbonization and not financing climate solutions
Contribution of portfolio activities to net-zero goals	Financed emissions are reduced by an arbitrary amount	N/A	Yes	Uncertain, not clear how to link ambition to science-based pathways	Yes	Yes, finance "green" activities and companies who have signaled their decarbonization goals

Source: Authors

This initial assessment of different mitigation strategies reveals that no one observed strategy is fully aligned with all the net-zero principles. The approaches relying on the use of avoided emissions or replacing decarbonisation with carbon removals are not consistent with the guiding principles outlined in Section 3 since they do not effectively incentivize the financing of needed decarbonization efforts. Financed emissions-based mitigation approaches are most

credible on a sector basis, as sector-based decarbonization helps to better ensure transition financing for companies in all sectors. Strategies that rely on reducing overall financed emissions without sector differentiation can incentivize divestment and portfolio reallocation towards lower emitting sectors. A sector-based approach can also effectively encourage engagement and transition financing of all sectors, .

The assessment indicates that a combination of approaches may be the most credible option for FIs depending on their business model, roles, services, mandates, asset classes, and mitigation tactics. They are based on looking at net-zero for FIs through the lens of 1) financed emissions, 2) alignment of financing to net-zero goals, and 3) contribution of financing to global net-zero goals.

1. **A financed emissions strategy:** net-zero claims are based on measuring and tracking emissions associated with financing activities. There are two important considerations when evaluating financed emissions strategies: if the abatement just occurs within the portfolio by reducing exposure to GHG emissions or if the abatement measures also promote decarbonization in the wider economy, i.e., the portfolio company reduces its own value-chain emissions.

These considerations are important since various mitigation tactics are currently being used to reduce financed emissions such as via engagement of portfolio companies, shifting toward lower-emitting constituents by tilting to more efficient companies, adoption of exclusion and divestment levers, or increased financing of climate solutions. For example, the maintenance of sector constraints can help avoid the simple shifting of capital from high carbon-intensity sectors, such as materials and energy, to lower carbon-intensity sectors like services. Several FIs have developed specific methods to pursue this sector-based approach, including JP Morgan's Carbon Compass, ING Bank's Terra methodology, and Barclays' BlueTrack, which focus on reducing portfolio intensity using sector-based strategies.

2. **A portfolio alignment strategy:** net-zero claims are based on assessing the relative level of net-zero alignment of their financing activities. It requires companies to develop and disclose forward-looking ambitious reduction targets and ultimately to reduce emissions in line with global or sector goals.

Alignment strategies can ensure that companies who need to decarbonize, and have signaled their intention to do so, can receive the necessary financing and are not constrained by their current emissions profile. The TCFD's Portfolio Alignment report of the Task Force on Climate-Related Financial Disclosures (TCFD) emphasizes the critical role of forward-looking portfolio alignment strategies for net-zero target setting. This can effectively be used to "incentivize institutions to engage with counterparties and achieve targets by facilitating their transition, instead of by divesting" (PAT 2021).

Alignment strategies present their own set of risks. Current alignment metrics focus heavily on decarbonization, setting out how companies should be reducing their emissions along science-based pathways, but do not adequately address how to define alignment for climate solutions or certain non-corporate asset classes (e.g., sovereign bonds). There is also the risk that the portfolio companies do not set or achieve targets at the scale required for alignment strategies to become effective for achieving targets.

3. **A portfolio contribution strategy:** net-zero claims are based on shifting financing toward technologies needed for the real economy to reach net-zero emissions. FIs focus on financing both decarbonization activities and explicitly reallocating financing activities to climate solutions at a rate that is consistent with global climate goals.

Climate-solution financing covers a broad range of activities that actively contribute to global climate goals. In addition to serving as viable investment opportunities in high-growth sectors, the financing of climate solutions can be used to contribute to other net-zero strategies such as meeting financed emissions-reduction targets by shifting finance from the most high-intensity sectors and companies to more efficient

companies, for example, by shifting finance from fossil fuel-based power generation to renewable energy.

This strategy also puts a heavy focus on achieving global net-zero emissions. For FIs to achieve their net-zero targets, they will have to ensure that their portfolio companies can reduce their own value-chain emissions and effectively neutralize their unmitigated emissions. With this in mind, FIs are helping to finance GHG removal approaches, as these technologies will ultimately be used by their portfolio companies to achieve net-zero. However, further research is needed to appropriately define the ambition level that can be considered consistent with global climate goals.

5.2 Metrics

As highlighted in the landscape assessment, many mitigation tactics are being used by FIs as a part of their net-zero targets. Each of these ultimately relies on metrics to track the progress toward net-zero. Based on the net-zero strategies discussed earlier, this section categorizes a non-exhaustive list of metrics in terms of financed emissions, portfolio alignment, and portfolio contribution (Table 5). The metrics presented in this section do not represent recommendations from the SBTi but, rather, reflect various metrics that are currently being used to track progress. These will be explored further during the net-zero standard development process.

Table 5. Observed metrics used in net-zero strategies

Strategy Type	Metric	Description
Emissions-based: tracks an FI's financed emissions	Absolute emissions (tCO ₂ e)	Total amount of CO ₂ -equivalent emissions attributed to an FI's operational and financing activities. Tracks the absolute amount of GHG emissions in a portfolio.
	Portfolio-wide intensity, e.g., Weighted average	Absolute emissions per monetary unit, such as the volume of financing (e.g., dollar invested or loaned), or

	carbon intensity (tCO ₂ e/revenue)	underlying company revenue. Demonstrates the GHG efficiency per dollar invested.
	Sector-based physical intensity (e.g., tCO ₂ e/MWh)	Measures the efficiency of a portfolio (or parts of a portfolio) in terms of absolute emissions per unit of a common production output (e.g., ton of cement produced, mega-watt hour of electricity produced).
Alignment-based: tracks the level of net-zero alignment of portfolio companies	Capacity-based	Assess the technologies and asset-level distribution needed for Paris Alignment. The Paris Agreement Capital Transition Assessment approach is well-established and widely used for this purpose.
	Engagement	Engagement activities are pursued by FIs with the goal of increasing the portion of portfolio companies that are aligned with relevant net-zero pathways.
	Binary Target Measurement	Represents the percentage of investments or companies in a portfolio with declared net-zero or Paris-alignment targets.
	Implied Temperature Rise	Translates an assessment of company alignment into a temperature score that describes the most likely global warming outcome if the global economy were to exhibit the same level of ambition as the counterparty in question.
Contribution-based: tracks the contribution of financing to economy-wide net-zero	Internal Carbon Price	A shadow price on carbon at the company level is an assumed cost of carbon emissions that is incorporated in calculations to illustrate the economic implications of carbon emissions on business decisions. This cost is sometimes used to specifically finance climate solutions.
	Green Metrics (e.g., Taxonomy or revenue share)	Several green metrics exist that classify companies based on taxonomies of economic activity, e.g., EU Taxonomy for

		Sustainable Activities, Climate Bonds Taxonomy, or on share of revenue from green activities.
--	--	---

Source: Authors

Depending on the net-zero strategy, these metrics are being used in isolation and in combination with each other to track progress toward achieving net-zero goals. However, not all metrics can be used to credibly track progress toward net-zero. This is either due to uncertainty in how they can be consistently quantified, or due to the lack of a clear link with how science-based ambition is defined. The metrics should ideally enable a clear understanding of what parts of the portfolio are aligned and which are not, helping to drive an engagement-first approach.

Sector-based metrics can be complemented with forward-looking alignment metrics to guide the financing of companies in all sectors that are decarbonizing their activities along appropriate sector pathways. These metrics can be used to help transition all sectors and enable the reduction in financed emissions from the FI portfolio, while also financing the transition through engaging portfolio companies.

Alignment-based metrics offer a forward-looking approach to assess the relative level of ambition of portfolio companies. While these metrics are relatively new, a growing body of work is being undertaken to develop and harmonize the methodologies (PAT 2021). Alignment metrics are usually based on GHG reduction targets and hence best suited to decarbonization efforts, and have not typically assessed climate solutions (e.g., renewable energy or other low-impact companies). Further research is needed to understand how alignment metrics can be used to assess all types of companies.

Contribution-based metrics are relatively new and are more difficult to link to global climate goals. In particular, green metrics that rely on taxonomies and assessments of green revenue are still in their infancy. These metrics can guide capital reallocation toward environmentally



Partner organizations



WORLD
RESOURCES
INSTITUTE



sustainable economic activities, but further research is needed on the process to establish a science-based target, the ambition of which is linked to global goals.

6 TARGET FORMULATION AND TRACKING

This section presents initial implications of the principles, definitions, and metrics presented earlier on FIs' treatment of fossil-fuel financing, use of carbon credits, and target timeframe.

6.1 Treatment of fossil-fuel financing

The combustion of fossil fuels continues to be the largest source of GHG emissions and the central driver of climate change. Significant reduction in the production and use of fossil fuels is essential to achieving a net-zero economy and avoiding the catastrophic consequences of climate change. The transition to a net-zero GHG energy system is an enormous task with far-reaching implications. First, the phasing out of fossil fuel production needs to be counterbalanced by the phasing in of renewable energy and other methods of alternative energy supply, combined with major infrastructural changes. Second, the phasing out of fossil fuels will have significant implications for global trade, fossil fuel market share distribution across countries, and other geopolitical and macroeconomic impacts (IEA 2021). Third, countries with limited resources to manage the transition could face larger social impacts if wealthier or less fossil-dependent countries do not decarbonize faster than the global average. To help resolve these issues, it is incumbent on governments and FIs to play an active role in shifting policies and financing flows accordingly.

Despite increased climate ambitions under the Paris Agreement, governments, companies and FIs are, in aggregate, planning to produce more than twice the amount of fossil fuels in 2030 than would be consistent with limiting global warming to 1.5°C (SEI et al. 2021). Additionally, many FIs, including those that belong to the various net-zero alliances, have not set detailed plans to reduce their fossil-fuel financing. In contrast, global coal, oil, and gas production needs to decrease by around 11 percent, 4 percent, and 3 percent, respectively, each year between 2020 and 2030 to be consistent with limiting warming to 1.5°C (SEI et al. 2021). Regarding future capacity, the International Energy Agency has also stated that there is “no need for investment in new fossil fuel supply” in its net-zero pathway report (IEA 2021).

Fis seeking to set net-zero targets should transparently address the role of fossil fuels in their financing activities. SBTi has developed a disclosure, transition, and phase-out approach for further consideration and elaboration.

1. **Disclosure:** Annually disclose fossil-fuel related financing activities, including investments (public equity, private equity, corporate bonds), direct project financing, arranged financing (i.e., securities underwriting), and lending.
2. **Transition:**
 - a. Engage with fossil-fuel companies to adopt net-zero targets and action plans,
 - b. End financing of any and all new fossil fuel exploration and production,
 - c. Divest if companies are unable or unwilling to transition in line with net-zero pathways.
3. **Phase-out:** End all financial support (excluding decarbonization or transition to zero-carbon alternatives) to existing coal assets by 2030 and to existing oil and gas assets by 2040.

Historically, the SBTi has not mandated specific sector requirements for meeting targets. Engagement, exclusion, and divestment tactics are often implicit in financial-sector mitigation strategies and targeted at the fossil-fuel sector. FIs are currently using both implicit and explicit fossil fuel financing approaches. Implicit commitments mean that FIs disclose their current financing activities as they relate to fossil fuels, but do not set specific divestment or exclusion targets as part of their mitigation strategy. By having a net-zero target, the FI would have to align all financing with relevant 1.5°C decarbonization pathways.

With explicit fossil fuel commitments, FIs also establish a specific target for fossil-fuel financing. Several examples of these targets have been made by FIs, including La Banque Postal, which has made a commitment to completely exit from oil and gas, both conventional and unconventional, by 2030 (LBP 2021). Another example is the Canadian Pension Fund CDPQ,

which has committed to a complete exit from oil production by 2022 as part of their mitigation approach (CDPQ 2021).

Within the stakeholder process for this paper, November draft survey responses indicated a high level of consensus (more than 80% of the 130 respondents) supporting the idea that SBTi should require explicit fossil fuel components in net-zero targets. Beyond explicit targets, more than two-thirds of survey respondents agreed with the broad outline of the “Disclose, Transition, Phase-Out” approach.

There are several key issues related to the fossil fuel requirements including:

- **Coverage:** defining the level of coverage required for fossil fuel related activities. This could be all activities related to fossil fuel exploration, production, sale, and use, or more narrowly focused criteria on financing of fossil fuel production and unabated fossil fuel power plants.
- **Phase-out threshold:** the disclose, transition, phase-out approach is intended to advance 1.5°C engagement and only advocates the phase-out of financing for fossil fuel companies unable or unwilling to transition. This does not imply a total divestment of all coal, oil, and gas companies.
- **Equity implications:** the equity and distributive implications of energy transition are beyond the scope of SBTi.
- **Transition definition per fuel, qualitative versus quantitative methods, and scientific basis:** these issues are linked to the lack of a single 1.5°C scenario for global stabilization. While the IEA NZE2050, IPCC, and UN Emissions Gap Report all consistently indicate a transition away from fossil fuels, the differences among scenarios create challenges for target-setting method development. As the SBTi works on finalizing a detailed oil and gas sector target-setting method, the disclose, transition, and phase-out approach is intended to guide FIs’ net-zero target formulations. These and other questions will be conclusively resolved in the SBTi Net-Zero Finance Standard development process.

La Banque Postale's Fossil Fuel Exit

In October 2021, La Banque Postale became one of the first financial institutions to set a validated Science-Based Target, committing to ensure that its banking activities achieve net-zero carbon emissions by 2040. It also became the first bank to publish a fossil-fuel exit strategy, committing to a complete withdrawal from coal and both conventional and unconventional oil and gas (upstream and midstream activities) by 2030.

The bank will refrain from financing oil and gas energy projects, no longer provide financial services (loans, account management, etc.) to the sector, and end legacy services by 2030. La Banque Postale will also discontinue support to businesses actively involved in lobbying on behalf of the fossil fuel industry (LBP 2021).

6.2 Treatment of carbon credits and carbon removals

Since the launch of the Science Based Targets initiative, the initiative has had a clear position that carbon credits do not have a role in meeting science-based targets and that decarbonization within corporate value chains needs to be the priority for businesses. In the Corporate Net-Zero Standard, the SBTi provided new concepts of Neutralization and Beyond Value Chain Mitigation that clarify the role carbon credits play in achieving a net-zero economy. Neutralization refers to measures that companies take to remove carbon from the atmosphere and permanently store it to counterbalance the impact of emissions that remain unabated at net-zero. Beyond value chain mitigation signifies actions or investments that fall outside a company's value chain, including activities that avoid or reduce emissions, or that remove and store GHGs from the atmosphere to address unabated emissions while on the path to net zero.

To align with the SBTi Corporate Net-Zero Standard, companies may not purchase carbon credits as a replacement for reducing value-chain emissions in line with their near and long-

term science-based targets – these carbon credits are also often referred to as “offsets”. However, purchasing high-quality carbon credits in addition to reducing emissions along a science-based trajectory can play a substantial role in accelerating the transition to net-zero emissions at the global level. Carbon credits play two roles in corporate net-zero mitigation:

1. **During the transition to net-zero:** Companies are encouraged to purchase carbon credits while they transition towards a state of net-zero emissions (i.e., in addition to science-based mitigation of value-chain emissions) to support society to achieve net-zero emissions by 2050. Examples include purchasing high-quality, jurisdictional REDD+ credits or investing in direct air capture (DAC) with geologic storage.
2. **At net-zero:** Companies with residual emissions within their value chain are required to neutralize those emissions with an equivalent amount of carbon dioxide removals at their net-zero target date, and these removals can be sourced from carbon credits. Net-zero claims can only be applied once this state has been reached.

The role of financial institutions

FIs are currently using varying amounts and types of carbon credits as part of their net-zero mitigation strategies. Based on feedback from stakeholders in the process to develop this paper and the existing approach in the Corporate Net-Zero Standard, the SBTi has established a proposed approach that will be further explored during the Finance Net-Zero Standard development process. Table 6 below provides further context on how different types of credits may be used by companies according to the Corporate Net-Zero Standard and the proposed approach for FIs. An FI's value chain is considered to include all on and off-balance sheet portfolio holdings and activities, i.e., Scope 1, Scope 2 and Scope 3, categories 1 through 15 (GHGP 2013).

Table 6: Use of Carbon Credits by Companies and Financial Institutions

Use of carbon credits and relevant target	Beyond Value Chain Mitigation	Neutralization
Carbon credits purchased by corporates in relation to their net-zero targets	<p>Beyond value chain mitigation cannot be used to meet net-zero targets (i.e., cannot be used to claim net-zero), but is strongly encouraged as an optional and supplementary action in the transition to net-zero.</p> <p>As part of this, companies may opt to purchase carbon credits while they transition towards a state of net-zero emissions (i.e., in addition to science-based mitigation of value-chain emissions).</p>	<p>Companies with residual emissions within their value chain must neutralize those emissions with an equivalent amount of removals to reach net-zero targets. These removals may be sourced from carbon credits outside the value chain.</p>
Carbon credits purchased by FIs in relation to their net-zero targets	<p>Companies, including FIs, are encouraged to mitigate emissions beyond their value chains in the transition to net-zero, which may include carbon credits. However, carbon credits cannot be used for making net-zero claims.</p> <p>Carbon credits purchased by an FI may be described in a separate and supplementary metric/target (e.g., amount of high-quality carbon credits purchased) as a contribution to achieving a global net-zero economy.</p> <p>Carbon credits may not be used to meet the FI's near or long-term SBTs.</p>	<p>FIs must neutralize all unabated emissions from their operating activities (Scope 1 and 2 emissions) and value chain (Scope 3 emissions, category 1-14) with permanently removed carbon to reach net-zero. These removals may be sourced from carbon credits outside the value chain. I.e., the Corporate Net-Zero Standard is applicable to FIs in these cases.</p> <p>FIs should support neutralization of all unabated scope 3, category</p>

		15 emissions with permanent removals.
--	--	---------------------------------------

Source: Authors

The SBTi Corporate Net-Zero Standard emphasizes that companies may only claim to have reached net-zero through deep decarbonization and eventual neutralization of residual emissions. In the transition to net-zero, companies may purchase carbon credits as additional actions, but these shall not be used to claim net-zero. For FIs, the same approach can be taken for Scope 1 and 2, as well as Scope 3 emissions category 1-14. These emissions must be reduced in alignment with reaching net-zero at the global or sector level in eligible 1.5°C pathways by 2050 or sooner. Any residual emissions must be neutralized with permanent removals when this level of reduction is achieved, to reach net-zero.

In the transition to net-zero, it is recognized that FIs can provide needed liquidity and market mechanisms for efficient carbon-credit allocation and transfer that supports societal achievement of net-zero emissions by 2050. As is the case for companies, these beyond value chain activities cannot be used by FIs to make claims against their own target achievement. The net-zero standard development process will explore how this position should evolve for FIs to ensure that net-zero targets can incentivize the necessary financing for carbon removal solutions and to ensure that FIs can make credible claims when achieving a state of net-zero.

For FIs to support neutralization of all unabated scope 3, category 15 emissions with permanent removals, a key decision is how neutralization should be performed across asset classes, sectors, and portfolio company value chains. There are two broad approaches that can be undertaken:

- a) Neutralizing residual emissions at the asset class or sector level through actively financing carbon removal activities, exclusive of carbon credits and/or
- b) Portfolio companies setting net-zero targets and neutralizing unabated value-chain emissions with permanently removed carbon. These removals may be sourced from carbon credits by the portfolio companies.

Many FIs support the balancing of residual emissions at the portfolio level, while others support the view that the burden of neutralization should be carried by the emitters, that is on the individual company level. There are advantages and drawbacks to both approaches which implies that the two options need to be taken into consideration. A number of other important questions on the topic of neutralization remain to be addressed, including:

- How should 1.5°C-aligned levels of residual emissions be allocated within portfolios?
- How should neutralization measures be aggregated across different types of portfolio companies (e.g., can emissions removals within the value chain of one portfolio company be used to balance positive value-chain emissions of another portfolio company)?
- What is the best means to account for early-stage financing in carbon removal projects that may not yield removals for years to come?

6.3 Near- and long-term targets

The principles highlighted in Section 4 emphasize the need for the alignment of financing activities with 1.5°C pathways. Long-term net-zero claims are only credible if they are accompanied by near-term targets to ensure accountability. As part of the net-zero standard development process, the SBTi plans to explore how the existing near-term target-setting framework may have to change to be fully compatible with eventual net-zero target-setting criteria.

SBTi plans to explore two options for linking near- and long-term targets:

- a) Maintain the near-term SBT framework separately from the net-zero framework, with its focus remaining exclusively on decarbonization-based targets, while the long-term net-zero framework would expand to capture climate solutions and neutralization aspects of net-zero.

- b) Revamp the near-term SBT framework to mirror the net-zero framework, except in terms of timeframe, so that both the near-term and long-term SBTs reference both decarbonization and climate solutions.

7 DISCUSSION AND PRELIMINARY CONSIDERATIONS

Financial-sector net-zero targets represent an important tool for FIs to signal their commitment to making finance flows consistent with a pathway toward low GHG emissions and climate-resilient development. These targets also help to ensure that financing can become compatible with a net-zero economy and enable the creation of credible net-zero investment strategies. By making net-zero targets science-based, FIs can ensure that they are sufficiently contributing the challenge faced by the global economy.

Net-Zero Finance and Policy Links

While SBTs are voluntary, SBTi frameworks and standards are becoming more relevant for policymakers as the percentage of the economy covered by SBTs and net-zero targets grows. The IPCC and IEA 1.5°C scenarios that undergird net-zero are contingent on extensive policy and regulatory interventions. Furthermore, the SBTi theory of change uses tipping points and peer influence to catalyze SBT adoption, thereby providing proof of concept to policymakers that GHG emissions mitigation can co-exist with, and in fact are necessary for, economic competitiveness.

Given the current regulatory environment within the finance sector, there is a clear opportunity for expanding the bi-directional flow of climate-related influence and information between FIs and policymakers. Three opportunity areas include expanded disclosure regulations (e.g., Article 173 in France, mandatory TCFD reporting in the UK), tax and fiscal mechanisms to incentivize financial institution SBTs, and central bank integration of climate considerations into monetary policies. Policy linkages and recommendations are an undeveloped area of the SBTi that could be elaborated with sufficient interest and resources.

Integration of SBTi monitoring, reporting, and verification

Setting net-zero targets is an initial step for FIs to begin aligning their activities toward contributing to global climate goals. Creating credible net-zero investment strategies and

reporting on progress are crucial for accountability and transparency purposes. The SBTi is creating a monitoring, reporting, and verification (MRV) standard to track progress against SBTs.

This standard will enable FIs to track the progress of their portfolio companies by highlighting which companies are meeting their targets and effectively aligning their activities with relevant net-zero pathways. The protocol will also enable external stakeholders to track the progress of FIs and provide transparency regarding connections between financial alignment and real-world impacts.

7.1 Considerations

On the basis of the principles, definitions, and metrics presented in this paper, the following initial considerations are provided for FIs seeking to set and implement robust science-based net-zero targets. These considerations will be followed by more detailed guidance and criteria that the SBTi will develop using an inclusive and transparent multi-stakeholder process.

- **Coverage:** An FI's net-zero target should cover all relevant operational and financing activities, and operational and value-chain emissions, including Scope 3, category 15 financed emissions.
- **Timeframe:** FIs should reach net-zero by no later than 2050. While earlier target years are encouraged, a more ambitious timeframe should not come at the expense of emissions mitigation.
- **Accountability:** Long-term net-zero targets should be supported by near-term science-based targets to drive action within timeframes that are aligned with FI planning and investment cycles and to ensure emissions reductions in the real economy that are consistent with 1.5°C mitigation pathways.
- **Transparency:** Definitions, methodologies, metrics, targets, strategies, and any other relevant information used by FIs should be publicly available and should allow all stakeholders to assess whether they are aligning with the goals of the Paris Agreement. Progress on achieving targets should be reviewed and reported at least annually.

- **Abatement:** FIs should align the emissions generated from their operations and financing at a pace and scale consistent with mitigation pathways that limit warming to 1.5°C with no or limited overshoot and limited reliance on the deployment of carbon removals at scale. The impact of actions taken by FIs should center on supporting economy-wide decarbonization and not simply reducing exposure to GHG emissions within portfolios.
- **Neutralization of residual emissions:** FIs can support neutralization activities by financing permanent emission removals to aid the development of carbon sinks either by 1) supporting portfolio companies to neutralize their residual emissions or 2) achieving a balancing of positive and negative financed emissions via direct financing of carbon removal activities that neutralize residual financed emissions.
- **Engagement:** FIs should adopt, disclose, and execute an action plan to influence portfolio companies to undertake measures that help accelerate a net-zero transition in the real economy. Strategies can include the development and use of sustainability-linked products or services, engagement strategies, voting rights, policy advocacy, and best practices, among others.

8 NEXT STEPS

This paper provides a conceptual foundation for financial net-zero targets through the establishment of key principles to help define net-zero for FIs and assess a range of metrics that may be most suitable to track progress towards these net-zero goals. Target formulation considerations such as the role of fossil-fuel financing, climate solutions, and the use of carbon credits by FIs are also discussed.

The landscape analysis revealed that there remains uncertainty and inconsistency in how FIs set net-zero targets and design mitigation strategies. We identified five types of strategies that are currently being employed by FIs which incorporate different tactics for addressing financed emissions reduction, emission removals, and the financing of climate solutions. This paper represents the first step in classifying these strategies and assessing their effectiveness against key science-based principles.

The questions raised throughout this paper will be further addressed through a transparent and inclusive multi-stakeholder process that will provide the input for developing target validation criteria, detailed guidance, and technical resources to support FIs with the development and implementation of science-based net-zero targets.

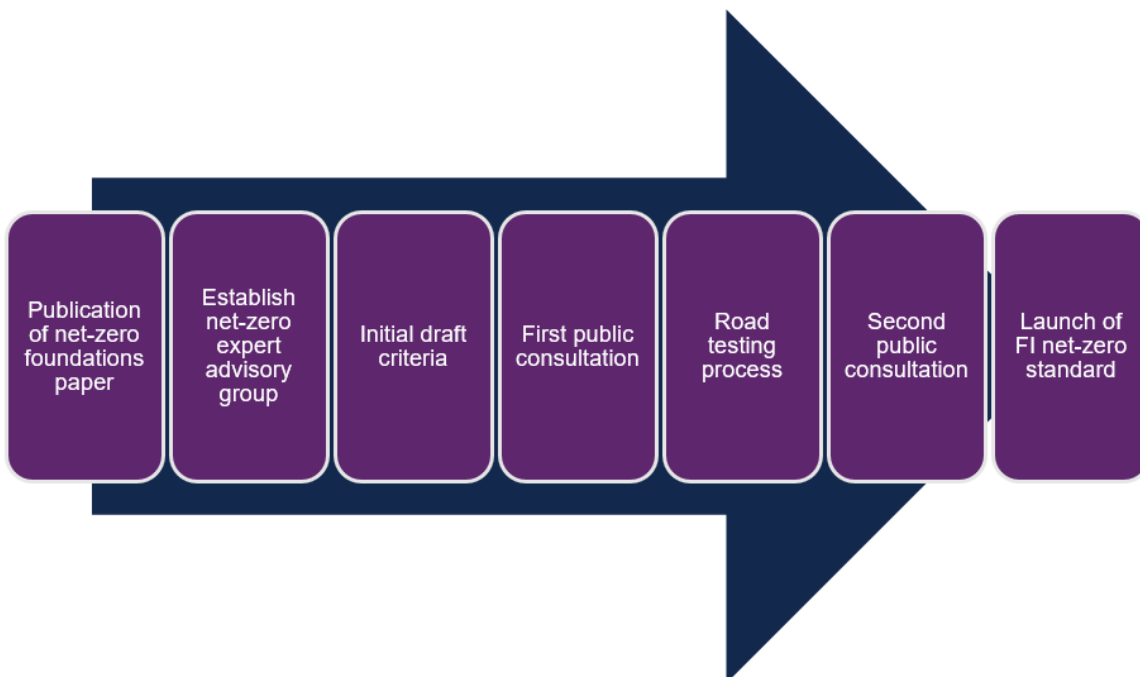
While the financial sector plays a different role than the corporate sector in achieving net-zero emissions, the forthcoming standard will be informed by, and aligned with, the SBTi Corporate Net-Zero Standard. As part of the standard development process, further research and consultation is planned to address the following key technical topics:

- **Definitions:** how should the net-zero definition and mitigation strategies apply to different types of FIs, given their different abilities to influence and drive emission reductions in the real economy? How can different types of financing activities can be captured in the boundary of a net-zero target?

- **Climate solutions:** what is the role of climate solutions in net-zero targets, specifically as it relates to metrics and how the rate of climate-solution financing could be tied to science-based scenarios?
- **Carbon credits:** how are the use of carbon credits and direct financing of potential carbon credit generating activities related to net-zero claims across FIs' operations and financing activities?
- **Fossil fuel financing:** how can the proposed disclosure, transition, and phase-out approach be addressed in net-zero targets?
- **Net-zero claims:** What are the conditions that an FI needs to meet to claim that they are aligned with global net-zero goals?
- **Interim targets:** how should the near-term target setting framework for FIs evolve to ensure that it is fully consistent with the net-zero target framework?

Following publication of this paper, the SBTi intends to convene a specific net-zero expert advisory group to aid in the development of the net-zero standard. Figure 5 presents an overview of the steps in the standard development process

Figure 5. Net-zero standard development process



Source: Authors

9 GLOSSARY

Term	Definition
Abatement	Measures taken to prevent, reduce, or eliminate sources of GHG emissions within their value chains.
Alignment (with a 1.5°C mitigation pathway or net-zero pathway)	A state where a company is on track to achieve net-zero such that an escalation of actions (e.g., abatement levels) will not be required in the future to remain in line with a 1.5°C mitigation pathway.
Asset class	A group of financial instruments that have similar financial characteristics.
Carbon credit	An emissions unit that is issued by a carbon crediting program and represents an emissions reduction or removal of GHGs. Carbon credits are uniquely serialized, issued, tracked, and cancelled by means of an electronic registry.
Carbon removal (or carbon sequestration, CO ₂ removal, emissions removal)	The action of removing GHG emissions from the atmosphere and storing it through various means, such as in soils, trees, underground reservoirs, rocks, the ocean, and even products like concrete and carbon fiber.
Climate solutions	Covers a broad range of activities that actively contribute to global climate goals and can be broadly defined as green technologies. This includes renewable energy and sustainable mobility (e.g., electric vehicles), and carbon removal activities such as nature-based solutions, direct air capture, and BECCS.
Financing activities	For the purposes of this foundations paper, financing activities refers to all business activities undertaken by FIs with the expectation of making a profit and over which the FI has some influence. This includes investment and lending activities; securities underwriting; and advisory, insurance, and other services, although methods may not be currently available for all asset classes or services. Specific coverage thresholds will be established in subsequent criteria and guidance.

Financial institutions (FIs)	The SBTi defines FIs as companies whose business involves the dealing of financial and monetary transactions, including e.g., deposits, loans, investments, currency exchange, and insurance. If 5 percent or more of a company's revenue or assets comes from activities such as those described here, it is considered to be an FI.
Financed emissions	Absolute emissions that banks and investors finance through their loans and investments.
Greenhouse gas (GHG) emissions	The seven gases covered by the United Nations Framework Convention on Climate Change (UNFCCC) - carbon dioxide (CO ₂), methane (CH ₄), nitrous oxide (N ₂ O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF ₆), and nitrogen trifluoride (NF ₃).
Near-term science-based target (near-term SBT)	A specific level or threshold of a metric that an FI intends to meet over a defined near-term time horizon (five to ten years) such that an escalation of actions (e.g., abatement levels) will not be required in the future to remain on track for achieving a net-zero target.
Net-zero emissions	Net-zero emissions are achieved when anthropogenic emissions of GHGs to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple GHGs are involved, the quantification of net-zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, chosen time horizon, and others).
Mitigation	A human intervention to reduce emissions or enhance the sinks of greenhouse gases (IPCC).
Neutralization	Measures that companies take to remove carbon from the atmosphere and permanently store it to counterbalance the impact of emissions that remains unabated.

10 REFERENCES

Amalgamated Bank (2021). Net Zero Climate Targets Report

https://www.amalgamatedbank.com/sites/default/files/Net_Zero_Climate_Targets_Report.pdf

Aviva. 2021. "Taking Climate Action."

<https://www.aviva.com/newsroom/perspectives/2021/03/taking-climate-action/>.

Barclays. 2020. "Our Approach to Net Zero."

<https://home.barclays/content/dam/home-barclays/documents/citizenship/ESG/Our%20approach%20to%20net%20zero.pdf>.

CDPQ (Caisse de dépôt et placement du Québec). 2021. "CDPQ announces its new climate strategy." September 28, 2021.

<https://www.cdpq.com/en/news/pressreleases/cdpq-announces-its-new-climate-strategy>.

CDP. 2021. *Putting a price on carbon*.

<https://www.cdp.net/en/reports/downloads/5651>.

GHGP (Green House Gas Protocol). 2013. "Technical Guidance for Calculating Scope 3 Emissions (Version 1.0)."

https://ghgprotocol.org/sites/default/files/standards/Scope3_Calculation_Guidance_0.pdf.

GFANZ (The Glasgow Financial Alliance for Net Zero). 2021. Our progress and plan towards a net-zero global economy

<https://assets.bbhub.io/company/sites/63/2021/11/GFANZ-Progress-Report.pdf>

Guivarch, C. & Rogelj, J. (2017). Carbon price variations in 2°C scenarios explored. Carbon Pricing Leadership Coalition, USA.

Hale, T., T. Kuramochi, J. Lang, B. Mapes, S. Smith, R. Aiyer, R. Black, et al. 2021. *Net Zero Tracker*. Energy and Climate Intelligence Unit, Data-Driven EnviroLab, NewClimate Institute, Oxford Net Zero.

<https://www.zerotracker.net/>. Accessed October 2021.

IEA (International Energy Agency). 2021. *Net Zero by 2050 A Roadmap for the Global Energy Sector*.

<https://www.iea.org/reports/net-zero-by-2050>. Accessed October 2021.

IPCC (Intergovernmental Panel on Climate Change). 2019. *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/sr15/>

IPCC. 2021. *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*.

<https://www.ipcc.ch/report/ar6/wg1/#FullReport>

JPMorgan Chase & Co. 2021. *Carbon Compass: Paris-Aligned Financing Commitment Methodology*.

https://www.jpmorgan.com/content/dam/jpm/cib/complex/content/investment-banking/carbon-compass/Carbon_Compass_Final.pdf

LBP (La Banque Postale). 2021. *La Banque Postale is stepping up its decarbonisation strategy*. Press Release.

<https://www.labanquepostale.com/content/dam/lbp/documents/communiqués-de-presse/en/2021/cp-en-lbp-sbti-oil-gaz.pdf>

NZAOA (Net-Zero Asset Owner Alliance). 2021. *Inaugural 2025 Target Setting Protocol*.

<https://www.unepfi.org/wordpress/wp-content/uploads/2021/01/Alliance-Target-Setting-Protocol-2021.pdf>

PAT. 2021. *Measuring Portfolio Alignment: Technical Supplement*

<https://assets.bbhub.io/company/sites/60/2021/05/2021-TCFD-Portfolio-Alignment-Technical-Supplement.pdf>

SEI, IISD, ODI, E3G, and UNEP. 2021. *The Production Gap Report 2021*.

<http://productiongap.org/2021report>

SBTi (Science Based Targets Initiative). 2019. *Foundations of Science-based Target Setting, Version 1.0*.

<https://sciencebasedtargets.org/resources/files/foundations-of-SBT-setting.pdf>

SBTi. 2021a. *SBTi Corporate Net-Zero Standard, Version 1.0*.

<https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf>

SBTi. 2021b. *Beyond Value Chain Mitigation FAQ, Version 1.0*.

<https://sciencebasedtargets.org/resources/files/Beyond-Value-Chain-Mitigation-FAQ.pdf>

SBTi. 2021c. *Pathways to Net-Zero. SBTi technical summary, Version 1.0*.

<https://sciencebasedtargets.org/resources/files/Pathway-to-Net-Zero.pdf>

SBTi. 2021d. *Beyond Value Chain Mitigation FAQ. Version 1.0*.

<https://sciencebasedtargets.org/resources/files/Beyond-Value-Chain-Mitigation-FAQ.pdf>

United Nations Environment Program. 2021. *The Emissions Gap Report 2021*.

<https://www.unep.org/resources/emissions-gap-report-2021>

UNEP-FI (United Nations Environment Programme Finance Initiative). 2021. *Guideline for Climate Target Setting for Banks*.

<https://www.unepfi.org/wordpress/wp-content/uploads/2021/04/UNEP-FI-Guidelines-for-Climate-Change-Target-Setting.pdf>