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Finance for Zero: Redefining Financial-Sector Action to Achieve Global Climate Goals

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Executive Summary

As of 2023, the financial system is woefully misaligned with the world's climate goals. Six times the current annual level of investment in non-fossil fuel investments is needed between 2023 and 2030 to stay on a 1.5°C warming pathway.[1] The ratio of clean-energy lending and equity underwriting by banks relative to fossil fuels needs to reach 4 to 1 by 2030, whereas for 1,142 assessed banks, the ratio was between 0.8 and 1 at the end of 2021.[2]

As providers, underwriters, and fiduciaries of trillions of dollars of capital flows annually, financial institutions (FIs) play a critical role in decarbonizing the economy and scaling access to clean, affordable energy. Optimally, the roles and opportunities for the financial sector should be guided by an official pathway and associated policy tools, such as carbon pricing, public finance and guarantees, strategic subsidies, sectoral regulations, and so on. Unfortunately, that policy framework to shape and guide the financial sector does not yet exist.

In the absence of strong government leadership, there has been a proliferation of bottom-up models, tools, metrics, methodologies, and initiatives designed to measure and evaluate the climate performance of financial institutions. While the rapid growth of these initiatives demonstrates the financial sector's engagement, meaningful progress in realigning global finance to support climate goals has been limited. These frameworks and tools often overstate or misrepresent the extent to which they support meaningful action toward achieving climate goals, and at times rely on misaligned targets or metrics that undermine their effectiveness as tools for setting or assessing corporate commitments. Overall, existing commitments and strategies are not sufficiently aligned with the actions needed from financial sector actors to achieve climate goals.

There are deep and inherent limitations to bottom-up approaches to achieving decarbonization, some that are within the capability of financial institutions to address but many that are beyond their remit. This report focuses on the things the financial sector can and should do even in the absence of a robust long-term policy framework.

Part 1 of this report urges FIs and their alliances to be clear in their commitments, pledges, and communications about their climate-related objectives and corresponding strategies, their limitations, if any, and how they measure success. Current climate-related pledges, alliances, frameworks, and tools at times confuse or conflate risk mitigation with climate action, relying on targets and metrics that may not be fit for purpose. Whether intentionally or unintentionally, FIs and their alliances can misrepresent or overstate the effectiveness of their approaches in contributing to climate action. This misrepresentation can be exacerbated by the use of misleading metrics or strategies, such as selling or legally spinning off high-emitting assets or using offsets in net-zero pathways.

FIs should communicate clearly and accurately about their climate-related pledges and commitments, including whether their goal is to contribute to climate action or to mitigate their own financial risk and how their business strategies will be aligned to achieve those goals. FIs should ensure that targets, metrics, and methodologies are aligned with their goals and business strategies and do not misrepresent the effectiveness of their strategies.

FIs' commitments and strategies are shaped by their financial interests and their interpretation of their fiduciary and other legal duties and obligations; because of perceived tensions between legal obligations and certain climate-oriented strategies, FIs and their alliances should provide clear, public explanations of how their interpreted fiduciary and other legal duties shape their climate-related strategies.

Part 2 of this report proposes how financial institutions can and should contribute to, and not undermine, climate goals, under current policy conditions. While many of these actions are relevant for a risk-mitigating approach for FIs and their alliances, these recommendations go beyond risk mitigation in order to guide those FIs and their beneficiaries that seek to have real climate impact.

The following are the key recommendations for FIs' strategies to support global climate goals:

Stop lobbying against climate action: The fundamental way that FIs can support the energy transition—as well as mitigate their exposure to climate risk, create clearer pathways for private finance in climate-related opportunities, and reconcile potential conflicts between fiduciary duty and climate action—is to ensure that their climate policy engagement and that of their financed entities do not undermine government regulations. Specifically, FIs should stop lobbying against government regulation, both directly and through any business associations, and they should require that their financed entities similarly stop anti-climate lobbying.

Government policy, plans, roadmaps, and regulations are decisive for achieving global climate goals. Governments drive innovation, shift markets, assign costs and liabilities, incentivize important investments and behaviors, and define fiduciary responsibilities, among other things. Government policies are the most important determinant of corporate performance on sustainability issues, and public policies apply to all types of actors, both publicly traded and privately owned. Universal policies are necessary to address systemic risk facing FIs and their beneficiaries and to reduce the potential for the opportunistic behavior of industry laggards.

Shift finance: The most decisive and important role for the financial sector in accelerating the energy transition is its ability to mobilize the trillions of dollars needed to close the growing gap in climate finance and achieve climate goals. The emphasis for the financial sector, therefore, should be on how *new finance* is being directed, and whether new investments, loans, underwriting, and other forms of financing are contributing to—and not undermining—a rapid and just transition. Current financial flows toward low-carbon solutions must be multiplied by a factor of four to six, financing for fossil fuel exploration and expansion must end, and all new financing should be conditioned on robust 1.5°C alignment.

Use FIs' influence with their financed entities: To accelerate the energy transition, FIs should use their influence with the financed entities in their portfolios to support their transitions in line with a 1.5°C trajectory.

Part 3 of this report discusses the importance of more robust accountability and oversight mechanisms for financial institutions and their alliances with respect to climate-related strategies. Currently, there is little consequence for FIs that misrepresent their strategies and their effectiveness, that do not align their business plans or practices with their stated strategies, or that miss their own targets. Without addressing this gap, there will continue to be little incentive for honest communication or for the hard work of changing business plans and models.

Part 4 of the report discusses how FIs and their alliances can contribute to improving knowledge, data, and pathways that underpin FIs' climate strategies and engagement. Climate action calls for urgent and transformative change in a complex and rapidly evolving environment, in which the answers, appropriate technologies, and tools are not all readily available. The transformation requires an analysis of regional, national, and sectoral pathways and for the coordination of public and private actors and other stakeholders. The report recognizes the key challenges confronting FIs in implementing the report's recommendations, particularly those related to uncertain pathways, nascent and uncertain technologies, and insufficiently robust metrics and accounting methods, and suggests that FIs can actively contribute to resolving those uncertainties.

Some of the recommendations in this report are bold relative to existing practice, which underscores the gap between existing approaches and the financing pathways that are needed to achieve climate goals. The opportunities and pathways for the financial sector will be clarified and bolstered by evolving public policy, and the financial sector ought to be supportive of that policy framework. We hope this report provokes and supports critical discussions among policy makers, financial institutions, and their stakeholders around the policy framework and appropriate set of practices and tools that are necessary to meaningfully orient financial institutions toward our global climate goals.

Introduction

Global average temperatures increased by more than 1.1°C from pre-industrial levels during the 2011–2020 decade,[3] leaving very little time or maneuverability for meeting the targets of the 2015 Paris climate agreement. The physical impacts on humanity are worsening year on year, with fatal heat waves, storm surges, and dramatic rainfall.[4] Scientists warn that "reaching 1.5 in the near-term, would cause unavoidable increases in multiple climate hazards and present multiple risks to ecosystems and humans."[5] The financial costs of climate change are mounting. Oxford Economics found that warming of 2.2°C by 2050 could reduce global GDP levels by 20%.[6] A United States government inter-agency working group estimated conservatively that climate and weather disasters cost USD 165 billion in the United States in 2022 alone, and that the United States could be losing USD 2 trillion annually by failing to address climate change.[7]

And yet, even accounting for all nationally determined contributions as of September 2022, the world is on track to warm by 2.1°C–2.9°C by 2100.[8] In its 2023 *Sixth Assessment Report*, the Intergovernmental Panel on Climate Change (IPCC) is clear: "Climate resilient development prospects are increasingly limited if current greenhouse gas [GHG] emissions do not rapidly decline, especially if 1.5°C global warming is exceeded in the near-term,"[9] which, according to the IPCC, is more likely than not.

Averting the deepest climate crisis and mitigating the substantial financial costs of global warming and its consequences will require the decarbonization of the world's energy systems by 2050, and other major shifts in land use, transportation, and manufacturing, among other sectoral transformations. The notion of not emitting more carbon than is being absorbed by 2050 has led to the widespread adoption of the concept of "net zero," which has "become the organizing paradigm" for state and non-state actors' engagement with climate policy, despite consequential risks of that framing.[10]

Governments are responsible for producing official pathways, building on the pathways and analyses of academic studies and international organizations, in order to guide technologically sound, cost-effective, integrated, and long-term transformation strategies.[11] These pathways provide a necessary "benchmark" for the transformations needed throughout an economy, "to enable better decision making by policy makers, better informed advocacy, and more clarity for the business community."[12] They highlight the critical questions and challenges for government to navigate, including the interrelated challenges of energy planning, land-use planning, socio-economic transitions, research & development in key technologies, industrial-sector pathways, and so on. They also determine the roles and opportunities for non-state actors, including the corporate and financial sectors, and inform the policy tools and levers governments can use to shape those opportunities and financing pathways.

To date, most of the world's regions lack a coherent long-term pathway and accompanying policy framework to achieve net zero by 2050, including guidance to financial institutions,

sub-national governments, and non-financial private actors on their respective roles and contributions. In some countries, technical pathways are not yet developed and the necessary financing is in any event unattainable under current circumstances. In other countries, such as the United States academic researchers have put forward long-term pathways,[13] but there is no government-adopted pathway to guide long-term strategy. The Inflation Reduction Act, for example, aims for a 40% reduction of emissions by 2030, but without any government-provided pathway, or consistent set of policies. The IRA itself relies almost entirely on tax credits for low-emission energy, rather than on an integrated set of public policies.

In addition to governments, the private sector also has significant responsibilities in achieving climate goals. The role of non-state actors is emphasized by the United Nations High-Level Expert Group on Net Zero Emissions Commitments of Non-State Entities (UN HLEG).[14] Most notably, as providers, underwriters, and fiduciaries of trillions of dollars of capital flows annually, financial institutions (FIs) play a critical role in decarbonizing the economy and scaling access to clean, affordable energy. Optimally, the roles and opportunities for the financial sector should be guided by an official pathway and associated policy tools, such as carbon pricing, public finance and guarantees, strategic subsidies, sectoral regulations, and so on. That policy framework to shape and guide the financial sector does not yet exist.

In the absence of an official policy that is well integrated across technologies and sectors, and backed by an appropriate range of policy instruments, there has been a proliferation of bottom-up models, tools, metrics, methodologies, and initiatives designed to measure, evaluate, and coordinate the climate performance of financial institutions;[15] a non-exhaustive list is included as Annex A. While the rapid growth of these initiatives demonstrates the financial sector's engagement, meaningful progress in realigning global finance to support climate goals has been limited. Six times current annual levels of investments in non-fossil fuel investments are needed between 2023 and 2030 to stay on a 1.5°C warming pathway.[16] The ratio of clean-energy lending and equity underwriting by banks relative to fossil fuels needs to reach a minimum of 4 to 1 by 2030, whereas for 1142 assessed banks, the ratio was between 0.8 and 1 at the end of 2021.[17]

An important premise of this report is that a coherent technological pathway and associated policy framework is urgently needed to guide the financial sector. There are deep and inherent limitations to bottom-up approaches to achieving decarbonization goals, some that are within the capability of financial institutions to address but many that are beyond their remit. This report focuses on the things the financial sector can and should do even in the absence of a robust long-term policy framework.

Part 1 of this report begins by urging financial institutions to communicate clearly and accurately about their climate-related pledges and commitments. At the most basic level, current approaches to net-zero pledges are inconsistent about whether their purpose is to drive global climate goals, to mitigate financial risks for financial institutions, or to align with transition trajectories, which are different objectives with different implications for strategy and metrics.[18] The current range of climate-related pledges, alliances, frameworks, and tools at times confuse or conflate risk mitigation with climate action, relying on targets and metrics that may not be fit for purpose.

Financial institutions and their initiatives should be clear about whether their goal is to contribute to climate action or to mitigate risk and how their corresponding strategies will be aligned to achieve those goals. To the extent that FIs perceive tensions in their strategies with their fiduciary or legal obligations, these should be explained. Moreover, irrespective of FIs' climate-related strategies, they should ensure that targets, metrics, and methodologies are aligned with their stated goals and do not misrepresent the effectiveness of their strategies.

Even within approaches that purport to contribute to climate goals, there is confusion and disagreement about which approaches are necessary, effective, and achievable. Accordingly, Part 2 of this report proposes how financial institutions can and should contribute to, and not undermine, climate goals, addressing the main inconsistencies, gaps, and shortcomings of current approaches.[19]

The report recommends the following principles for FIs to support the climate goals of the Paris Agreement:[20]

1. Ensure that any direct and indirect lobbying and other political activities of FIs, and of their financed entities, are supportive of robust climate action.
2. Shift new finance to activities that support the 1.5°C trajectory, which implies multiplying the current financial flows to low carbon solutions by a factor of four to six.
3. Use influence with financed entities to support their transitions in line with a 1.5°C trajectory.

While many of these actions are also relevant for a risk-mitigating approach of FIs and their alliances, these recommendations go beyond risk mitigation in order to guide those FIs and their beneficiaries that seek to have real climate impact.

Part 3 of this report discusses the importance of more robust accountability and oversight mechanisms for financial institutions and their alliances with respect to climate-related strategies. Currently, there is little consequence for FIs that misrepresent their strategies and their effectiveness, that do not align their business plans or practices with their stated strategies, or that miss their own targets. Without addressing this gap, there will continue to be little incentive for honest communication or for the hard work of changing business plans and models.

Part 4 of this report recognizes the key challenges confronting FIs in meeting the recommendations in Part 2, particularly related to uncertain transition pathways, nascent and uncertain technologies, and insufficiently robust metrics and accounting methods. In our complex and rapidly evolving environment, the answers, appropriate technologies, and tools are not all readily available. The transformation also requires analysis of regional, national, and sectoral pathways, and for the coordination of public and private actors and other stakeholders. This report discusses several of these methodological challenges and suggests that FIs can actively contribute to resolving the uncertainties.

Some of the recommendations in this report are bold relative to existing practice, which underscores the gap between existing approaches and the financing pathways that are

needed to achieve climate goals. The opportunities and pathways for the financial sector will be clarified and bolstered by evolving public policy, and the financial sector ought to be supportive of that policy framework. We hope this report provokes and supports critical discussions among policy makers and financial institutions around the policy framework and appropriate set of practices and tools that are necessary to meaningfully orient financial institutions toward our global climate goals.

FINANCIAL INSTITUTIONS COVERED IN THIS REPORT

The report focuses on three types of financial institutions as actors in achieving climate goals: (1) asset owners, (2) asset managers, and (3) banks. While not discussed at length in this report, other market participants, including insurance companies, rating agencies, stock exchanges, and investment consultants, also have critical roles to play. Many of the recommendations in this report are applicable to these FIs, as well.

'Asset owners' refers to institutional investors such as pension funds, endowments, sovereign wealth funds, and insurance companies that steward capital for beneficiaries and policyholders. They have legal obligations to act in the best interest (and in some cases according to the mandates) of their beneficiaries (such as individual pension holders). Asset owners often have longer time horizons than other institutional investors, especially if they are stewarding capital for retirees, decades into the future. Large, diversified asset owners are sometimes identified as 'universal owners,' as their portfolios reflect a representative slice of the market; they therefore have an interest in the long-term health of the overall economy.

'Asset managers' receive their mandates from asset owners to manage their assets in ways that generate financial returns. Asset managers invest the capital from asset owners into companies, which can also include other FIs as well as sovereigns and other entities, through various types of financial instruments (e.g., equities or fixed-income instruments). Asset managers compete to win mandates from asset owners, usually by demonstrating improved financial returns or lower transaction fees compared to peers. Increasingly, sustainability commitments and credentials are part of asset managers' pitches, appealing to many asset owners' growing interest in accounting for environmental and social factors in their investment decision making. Asset managers have legal duties as fiduciaries to act with a duty of care and prudence on behalf of their clients (the asset owners). They may also have obligations to shareholders. Three of the largest asset managers globally are BlackRock, State Street, and Vanguard, which collectively own more than 20% of shares in the average publicly traded S&P 500 company, up from 13.5% in 2008.[21] These three asset managers are predominantly passive investors, meaning that they mainly invest their clients' capital through index funds or exchange-traded funds that track the market (according to different characteristics). In this way, they have become significant auto-allocators of capital. Most often, asset managers have short-term time horizons, as their performance is evaluated (by asset owners) on a short-term basis, usually through quarterly reporting.

Banks play a critical role in shaping the economy and capital markets since they provide *new* finance to companies (either through loans or through underwriting the issuance of new securities). There are three main types of banking services: retail, corporate, and investment banks. Many banks provide all three services and are known as universal banks. Many of the largest global banks are universal banks. Retail banks provide financial services for individuals and small businesses (e.g., savings accounts, personal loans, business loans). Corporate banking involves providing loans and other forms of financing to corporate entities. Investment banks focus on capital markets, providing services such as underwriting the issuance of new debt and equity, syndicated loans, and mergers and acquisitions advice. This report will focus on corporate and investment banks as critical actors in the zero-carbon transition (even though often the largest banks include retail services as well). Banks are often publicly listed, meaning they have legal obligations to the firm and its shareholders, as well as to clients (retail and commercial). Finally, banks are heavily regulated and, in particular, are subject to capital requirements that drive a significant part of their strategy. Under capital requirements, banks must maintain capital to cover credit, market, liquidity, and operational risk. Currently there are no capital requirements intended to cover climate risk but the Network of Central Banks and Supervisors for Greening the Financial system (NGFS) is researching how central banks' regulations could evolve in that direction.[22]

Part 1. Clearly Define Climate-Related Goals, Strategies, and Metrics

One of the most prominent initiatives of the financial sector is the Glasgow Financial Alliance for Net Zero (GFANZ), representing roughly 550 members across 50 jurisdictions, with trillions of dollars in assets under management.[23] GFANZ is comprised of seven sub-alliances for different financial institutions:

- The Net Zero Banking Alliance, with a collective USD 72 trillion in financial assets
- The Net Zero Asset Managers initiative, with USD 66 trillion in assets under management
- The Net Zero Asset Owner Alliance, with USD 11 trillion
- The Paris Aligned Asset Owners, with USD 3.3 trillion
- The Net Zero Insurance Alliance with USD 700 billion
- The Net Zero Financial Service Providers Alliance with 23 member firms
- The Net Zero Investment Consultants Initiative with 10 member firms[24]

At its launch, a GFANZ press release claimed that the "amount of finance committed to achieving 1.5°C [is] now at [the] scale needed to deliver the transition," "over $130 trillion of private capital is committed to transforming the economy for net zero," and that these commitments "can deliver the estimated $100 trillion of finance needed for net zero over the next three decades."[25] In April 2021, Mark Carney said of GFANZ, "We're going to get more trillions in, and trillions put to work, in order to decarbonize our economy."[26] Over time, these assertions were picked apart.[27] The touted figure was the sum of assets under management or controlled by the member financial institutions, a far cry from new capital allocated to climate goals or solutions as part of GFANZ membership. Of the assets controlled by member institutions, few were in any way redirected, leveraged, or otherwise used to advance climate action.

GFANZ's misrepresentation is exacerbated by confusion about whether their members' pledges and their incorporated frameworks and tools are intended to drive global climate goals, to mitigate financial risks for financial institutions, or to align with transition trajectories; each of these is a different objective with different implications for strategy and metrics.[28] The current range of climate-related pledges, alliances, frameworks, and tools at times confuses or conflates risk mitigation[29] with climate action, relying on targets and metrics that may not be fit for purpose.

FIs and the various initiatives, alliances, frameworks, and tools that describe climate-aligned approaches should communicate clearly and accurately about their climate-related pledges and commitments, including whether their goal is to contribute to climate action or to mitigate risk and how business strategies will be aligned to achieve those goals. FIs should ensure that targets, metrics, and methodologies are aligned with their goals and business strategies, and do not misrepresent the effectiveness of FIs' strategies.

FIs and their alliances should also provide clear, public explanations of how their interpreted fiduciary and other legal duties shape their climate-related strategies.

Specific common areas of confusion, misrepresentation, and misaligned strategies, targets, and metrics are discussed below.

a. Differentiating Risk from Impact

Shortly after the Paris Agreement was agreed, the G20's Financial Stability Board established the industry-led Task Force on Climate-Related Financial Disclosures (TCFD) as a set of guidelines for corporates and FIs to disclose the risks that climate poses to their businesses. TCFD recommends that corporates and FIs identify and disclose material climate-related information, including climate-related risks and corresponding potential financial impacts.[30] The TCFD and its recommendations have become foundational in framing the methods and approaches of many of the subsequent tools for corporate climate action.

The enterprise risk view employed by TCFD and others focuses on the risks *to* the corporation (or to a portfolio or FI) from climate change as opposed to how the corporation (or FI) impacts climate change and contributes to, or undermines, reaching climate goals. While a risk-based approach can result in some outcomes that align with societal climate goals, the actions required to manage risk to the company or FI may be insufficient or even directly at odds with the actions required to mitigate climate change. For example, an FI may reduce its exposure to financially material climate risk by simply selling off high-carbon assets to another entity, without producing any reductions in real-world emissions (see the discussion in Section 1.b. below).[31]

GFANZ recognizes the distinction between approaches to mitigate risk and those that seek to have climate impact: "Climate-related risk management focuses on the integration of climate-related financial risks into risk governance, processes, and strategies. The net zero transition plan should represent the strategic alignment of an FI's core business and build upon, but look beyond, an institution's own risk profile to support the net-zero transition in the real economy."[32] Managing risk and contributing to climate goals are distinct objectives with important differences in approaches to realizing those objectives and metrics that would be used to assess the effectiveness of FIs' strategies.[33] Nevertheless, most pledges and commitments continuously conflate the two.

b. Differentiating Portfolio Decarbonization from Impact

One way in which FIs mitigate exposure to climate risk is to focus on portfolio decarbonization.[34] For instance, investors may seek fossil fuel-free or low-carbon equity portfolios or exchange-traded funds[35] as a means of mitigating exposure to climate risk. Other investors may choose fossil fuel-free or low-carbon portfolios for moral or other reasons. However, as with the conflation of climate risk mitigation and climate impact, so too is confusion perpetuated around the climate impact of low-carbon portfolios.

Equity portfolios constructed with no or low carbon-intensive assets may have lower exposure to climate risk than a portfolio with high-emitting assets, but they have no climate

effect in the real economy, as the outstanding shares already sold by fossil fuel companies are simply held by other owners. A focus on decarbonizing portfolios may also incentivize a fund to spin or sell off high-carbon assets, decarbonizing the seller's portfolio by shifting asset ownership to the buyer, with no impact on real economy emissions.[36] For example, analysis from the Race to Zero Finance Sector Expert Group found that 96% of Swedish pension fund AP2's disclosed carbon-footprint reduction between 2019 and 2020 was due to changes in their holdings, rather than due to behavioural changes by portfolio companies.[37]

Some might argue that divestment influences the cost of capital, but in the widely distributed secondary public equity markets, "purchases and sales of small blocks of shares do not generally influence the market prices of securities or the behavior of the underlying enterprises."[38] Research suggests that the level of divestment needed to produce even a modest increase in the cost of finance is as high as 86% of outstanding shares.[39]

The Finance Sector Expert Group for Race to Zero noted in a 2022 discussion paper that "short-term actions to decarbonize portfolios … may not be an effective way to support Paris alignment in the real economy."[40] A June 2022 GFANZ report also recognized that withdrawing finance or divesting from high-emitting assets can "potentially have the unintended consequence of prolonging the life of high-emitting assets and even worsen their GHG emissions profile if they are transferred to those with less climate ambition, disclosure, or scrutiny."[41] The report states that for both FIs and companies, "the responsible approach is to manage down the emissions from portfolios, not pass them to someone else."[42]

c. The Use of Financed Emissions Calculations

A common methodology to link financial institutions' portfolios to GHG emissions in the real economy is that of 'financed emissions.' This methodology, now codified by the Partnership for Carbon Accounting Financials (PCAF),[43] extends the logic of emissions footprinting under the GHG Protocol[44] to financial activities. Financed emissions are calculated by multiplying the ratio of the invested amount to the enterprise value including cash (EVIC)[45] by the company's emissions. It could be calculated on the basis of absolute emissions (in other words, metric tons of carbon dioxide [CO_2] equivalent) or on the basis of emissions intensity, measured either per unit of activity (for instance, exajoules (EJ) or terawatt-hours (TWh) for energy production/consumption or ton of product produced) or per loan or investment volume. A portfolio's financed emissions are calculated from the cumulative share of emissions across the portfolio. Weighted average carbon intensity (WACI) is also used as an alternative measure, which measures the carbon intensity of investees. It involves calculating the tons of CO_2 emitted per USD 1 million of company sales and then aggregating them using the percentage weight of the invested amount within the portfolio.[46]

Although the calculation of financed emissions is widely used, it is plagued by both practical and methodological challenges. The practical challenges relate to what financed emissions purport to measure; because financed emissions focus on the emissions attributed to holdings in the portfolio of a financial institution, they are akin to a focus on portfolio alignment and are not an effective metric to assess an FI's *strategy* or *impact* on climate-

aligned trajectories. As described in Section 1.b. above, changes in financed emissions may result from the spinning off of carbon-intensive assets with no impact on absolute emissions.

The calculation of financed emissions is also plagued by methodological challenges. First, the methods of calculation (absolute versus physical intensity versus economic intensity versus weighted average carbon intensity), which industries are included, and other aspects of calculations vary by FI, so the metrics are not readily comparable.[47] Moreover, the enterprise value (denominator) can be affected by the choice of inflation factor; if inflation is ignored, assuming a positive inflation rate, a more recent denominator will be larger and financed emissions will appear smaller.[48] Similarly, any shock or contraction in the economy can lead to a sharp decrease in enterprise value, which will create the appearance of much greater financed emissions. Changes to reported emissions can similarly be driven by (1) changes related to allocations (increases or decreases in the amounts invested, including new investments and divestments); (2) changes in companies' emissions (irrespective of FIs' engagement); and (3) other technical issues (such as scope coverage increases).[49]

From a risk disclosure perspective, the aforementioned methodological challenges require attention; indeed, in their TCFD report, Citibank tries to address the problem by disclosing a range of metrics "includ[ing] PCAF financed emissions calculated with committed funds, normalized PCAF results that control for EVIC fluctuations, and physical intensity, financial intensity and data quality scores, among others."[50] However, for the purposes of measuring and communicating impact, a substantially different approach is needed, as reporting on financed emissions without disaggregation and attribution analysis is often misleading, both with respect to whether the financed emissions in a particular portfolio have, in fact, changed as well as whether any changes correspond to absolute reductions in the real economy.

For FIs reporting on the effectiveness of strategies to affect real-economy decarbonization, relevant metrics should more clearly present (or represent) how different financial instruments, transactions, and strategies affect real-economy emissions. Useful components to disclose include the type of financing (primary finance versus secondary markets, equity, or debt, etc.) and whether and how changes to the emissions could have resulted from the FI's financing or engagement versus other factors. The indicator should reflect changes over a defined period as a result of strategic engagement, rather than a static snapshot at any given time. An established methodology reflecting these aspects is needed, and FIs could usefully contribute their knowledge to this undertaking.

d. Effective and Accurate Target-Setting

Whether for reporting on exposure to climate risk, alignment with various climate scenarios, or contributions toward climate action, the careful use of fit-for-purpose and accurate targets, methodologies, and metrics is critical. Whether intentionally or unintentionally, inappropriate targets, methodologies, or metrics can be manipulated or can misrepresent the goals and effectiveness of specific pledges, initiatives, or alliances. In the sections below, we briefly describe risks and loopholes in relation to targets and metrics; more information is included in Annex B.

i. Restricting the Use of GHG Offsets

Corporate- and financial-sector targets that rely on carbon offsets to reach climate targets distort and misrepresent climate exposure, alignment, and impact. Nevertheless, offsets have played an increasingly significant role in corporate climate pledges. The use of low-cost offsets to achieve climate targets, by offsetting abatable emissions, has distracted from true emission abatement strategies. The most dubious and discredited form of offset is the avoided emissions offset, which involves calculating non-emitted carbon against a counterfactual baseline. The only form of offset that can effectively cancel an emission source is one that removes emissions with long-term storage. Thus, the only acceptable use of offsets in getting to net-zero emissions is for high-integrity, rights-respecting, removal-based offsets, and only for non-abatable, residual emissions.

While carbon credits should not be used to offset corporate emissions (other than non-abatable, residual emissions), rights-respecting, high-integrity investments in carbon-emissions reduction and carbon-removal credits (whether nature-based or emerging technologies) are still necessary in light of the current climate trajectory.[51] These investments are increasingly referred to as "beyond value chain" removals and emission reductions. Indeed, the UN HLEG recommends that "high integrity carbon credits in voluntary markets should be used for *beyond value chain* mitigation but *cannot be counted toward a non-state actor's interim emissions* reductions required by its net zero pathway"[52] (emphasis added). These investments should start immediately and FIs should increase their investment in this area and encourage clients and portfolio companies to do the same according to rights-respecting and high-integrity principles such as those laid out in the Tropical Forest Credit Integrity (TFCI) Guide.[53]

ii. Using Absolute Emission-Reduction Targets

Corporate carbon-emissions calculations are usually normalized, or made comparable and interpretable across scales, by converting them into metrics for emissions 'intensity.' Targets and strategies based on emissions intensity are even more poorly correlated with actual GHG emissions than those based on absolute emissions.[54] With per-activity emissions reductions, emissions intensity can fall, even as real (absolute) emissions continue to rise. Emissions-intensity metrics can also be muddied by corporate diversification. Decarbonizing the real economy requires replacing high-carbon energies with low-carbon solutions, in other words, reducing absolute emissions. Absolute emissions targets should be given primacy over intensity targets, restricting intensity targets for comparison purposes or as a measure of increased efficiency alongside the reduction in absolute emissions. In June 2022, Race to Zero moved to invert the traditional prioritization of intensity metrics in its *Interpretation Guide* so that absolute emissions-reduction targets are now required and intensity-based metrics are considered appropriate additions in specific cases.[55]

iii. Using Near-Term in Addition to Long-Term Targets

Emission-reduction targets are often on a 2050 timeline. Short- and medium-term targets are critical for meeting those 2050 targets. Long-term targets do not adequately account for the near-term constraints of the finite carbon budget, the possibility of overshooting

and triggering feedback loops, or the path dependency resulting from 'carbon lock-in.'[56] Emission-reduction targets should align with the recommendations of the IPCC: "Global greenhouse gas emissions [have] to peak before 2025 at the latest, and be reduced by 43% [from 2019 levels] by 2030."[57] Additional sectoral targets should be defined to provide a more granular view of the emission trajectories that should be targeted by each sector in addition to those already developed by the International Energy Agency (IEA), Sydney University of Technology (UTS) and the NGFS (*see* Part 4).

iv. Choosing Appropriate Base Years for GHG Calculations

Standards for emissions reduction targets for companies and FIs should require rigorously chosen base years and base-year calculations, rather than strategically chosen ones that can distort targets and the true extent of progress.[58] Companies setting targets can manipulate base years by (1) choosing a base year with unusually high emissions[59] and (2) choosing a base year that is so far past that calculations account for emissions reductions that took place earlier.[60] Both of these practices lead to an overstatement of emissions reductions.

v. Separating Methane (and Other Potent GHG) Emissions from CO_2 Emissions

The metric of 'CO_2 equivalent' is the most comprehensive metric and the most widely used. It converts all GHGs into a CO_2 equivalent using the global warming potential of each GHG. While useful to succinctly communicate on emission-reduction pathways and compare them across companies or sectors, the CO_2 equivalent metric masks and conflates progress on meeting varying targets related to the specific emitted gases. In addition, the metric can look different depending on the time period being used to calculate the global warming potential. Depending on the industry, separate reporting and targets might be needed for each GHG type.[61] When data quality impedes disaggregating GHG emissions, FIs can engage with their financed entities to improve the measurement and reporting of disaggregated emissions.

e. Scope of Coverage

FIs should be fully transparent about the scope of coverage of their climate commitments. In the case of FIs that are purporting to contribute to climate goals, for any scope of their coverage that is limited to a subset of assets or products, they must carefully and clearly explain the implication of the scope of coverage for the effectiveness of the FIs' strategies. Many of the GFANZ initiatives and other alliances only cover a limited set of asset classes.

Scope of coverage of climate commitments, as of October 2022

Institution type	*Initiative*	*Included*	*Not included*
Asset owners	Net-Zero Asset Owner Alliance (NZAOA)	Listed equity, publicly traded bonds, real estate, infrastructure, sovereign debt (for emissions accounting)	To be added in 2023: sovereign debt for target setting, mortgages, and private equity To follow: unlisted corporate debt, supranational debt, other
	Science-based Target initiative (SBTi) for FIs	Public and private equity, corporate and consumer loans, corporate debt, real estate, mortgages, electricity-generation project finance	To follow: sovereign debt, securities underwriting
	Paris Agreement Capital Transition Assessment (PACTA) for investors	Listed equity, corporate bonds, corporate loans	Real estate, infrastructure, sovereign debt
Asset managers	Net Zero Asset Managers initiative (NZAM)	Asset managers determine and disclose the coverage of their target as a proportion (%) of total assets under management (AUM), aiming to ratchet up that coverage to 100% by 2050	% AUM not covered by the target, determined by the asset manager
	PACTA for investors	Listed equity, corporate bonds, corporate loans	Real estate, infrastructure, sovereign debt
Banks	PCAF	Lending including business loans, mortgages, and motor loans	Underwriting/capital markets financing, certain off-balance sheet activities
	PACTA for banks	Loans (including credit facilities) to listed and unlisted companies	Underwriting, capital markets financing, certain off-balance sheet activities
Insurance companies	Net-Zero Insurance Alliance (NZIA)	Insurance and reinsurance portfolios	Members "aim to transition" investment portfolio to net-zero by 2050

The exclusion of banks' underwriting risks is significant for assessing the climate impact of new finance because the majority of bank finance for fossil fuels (whether existing or new) now comes from underwriting.[62] Barclays, for example, is the largest financier of fossil fuels in Europe, and 70% of its support for the fossil fuel sector (including companies with exploration or expansion plans) between 2016 and 2022 was issuance underwriting services.[63] All six major United States banks (JPMorgan Chase, Citi, Wells Fargo, Bank of America, Morgan Stanley, and Goldman Sachs) have made commitments to reach net-zero financed emissions by 2050, and some set 2030 targets and exclusion policies to restrict financing in the most high-emitting sectors.[64] However, not all of the 2030 targets include underwriting, and some fossil fuel exclusion policies cover project finance but not corporate finance.[65] While some financing for continued fossil fuels or for investment in clean energy

by fossil fuel companies can be compatible with the 1.5°C scenario, the lack of transparency and clarity on the scope of targets and strategies undermines accountability for FIs' climate-related commitments.

For asset managers, the NZAM commitment includes a stipulation to "create investment products aligned with net zero emissions by 2050 and facilitate increased investment in climate solutions."[66] Indeed, asset managers have met the increased demand for climate-related and environmental, social, and governance (ESG)-linked products more generally[67] by offering an increased number of sustainability-focused products and services.[68] The NZAM's 2021 progress report, however, indicated that in some cases, the 2030 targets of the initiative's members covered as little as 0.55% of AUM.[69] The average effective decarbonization target of the initiative is just 20%, and this "assumes that the AUM covered by these targets is representative of the emissions profile of their entire AUM."[70] In reality, a minority of carbon-intensive companies account for most portfolio emissions. Typically for BlackRock, Vanguard, State Street, Allianz, and Legal and General Investment Management (LGIM), 10% of their equity holdings explain 85% of their portfolio emissions.[71] In short, if targets do not cover 100% of AUM, there is a risk that even covering 90% of AUM will exclude up to 85% of emissions.

Similarly, sectoral policies—including those specific to fossil fuels and companies exposed to deforestation risk—are inconsistent in whether they cover all or some financial services, including capital markets underwriting, re/insurance, advisory, and mergers and acquisitions services. If a target cannot be holistic for lack of robust data or methodologies for certain asset classes and sectors, the scope and limitations should be transparently communicated and explained.

The scope of coverage of portfolio companies should similarly be scrutinized and carefully explained. According to the GHG Protocol, companies can pick one of three possible approaches to reporting their emissions: a financial control approach, an operational control approach, or an equity-share approach.[72] This flexibility enables companies to omit significant emissions, with the most frequent ones among fossil fuel companies being emissions from non-operated assets.[73] For instance, with its 2020 climate targets, BP became the first oil major to publicly commit to reducing oil *production* (not just emissions). Yet its pledge of reducing production by 40% by 2030 excluded its 20% stake in Russian oil giant Rosneft.[74] BP also created a separate legal entity for at least one of its major fields in Iraq, allowing it to change the optics of its exposure to high-emitting assets.[75] The 2020 target also excluded downstream sales of products not produced by BP, cutting out more than half of the total barrels sold daily.[76] (BP's pledge of reducing by 40% was subsequently dialed back in 2023, as oil prices remained high).[77]

Partial coverage of activities and assets in pledges and strategies can have the effect of misleading stakeholders and also inherently limits the contribution of FIs to climate goals.

f. Antitrust Concerns, Fiduciary Duties, and Financial Interests

Opponents of climate action have threatened some FIs and alliances with investigations and lawsuits, alleging that the alliances represent collective agreements not to finance investments in specific sectors and are therefore in violation of antitrust laws.[78] In March 2023, Munich Re withdrew from the Net-Zero Insurance Alliance purportedly to avoid antitrust risks.[79] There is no antitrust case precedent for a group of investors deciding to refuse financing to a specific industry or set of companies. While it is unclear how such a challenge would be treated by both United States federal and state courts, various factors would likely be taken into consideration, including market definition, whether the FIs have significant market control over the selling or provisioning of financing (or a monopsony control in the purchasing of bonds, for example), whether new entrants were prevented from entering the market, and other relevant market analysis. The burden of proof rests on the plaintiff in legal challenges, and the evidence can be challenging to establish and often easily refuted given the various ways to define a market and establish market control. In *rule of reason* cases, the arguments are fact-specific and open to interpretation, so a challenge of this type would likely be a difficult case for a plaintiff to win. Moreover, regulatory frameworks beyond the United States are evolving to more explicitly allow climate-related actions. For instance, the United Kingdom's Competition and Markets Authority recently published draft guidance on the application of competition rules to agreements between competitors with the objective of ensuring that "competition law does not impede legitimate collaboration between businesses that is necessary to the promotion or protection of environmental sustainability."[80]

Some FIs may also be uncertain as to how their fiduciary duties intersect with their climate-related actions. Fiduciary duties are the obligations governing those who manage other people's money. The precise legal nature of such obligations varies across jurisdictions but usually includes duties of loyalty (to act in the best interest of the beneficiary) and prudence (acting with care and diligence).[81] While specific laws and interpretations around fiduciary duty vary, traditional interpretations are oriented toward maximizing returns.

What varies with respect to fiduciary duties—as they are legally defined and as they are interpreted by directors and by the courts—is whether and to what extent accounting for environmental and social factors is part of fiduciary duties—either explicitly or as factors contributing to long-term value for beneficiaries.[82] In the United States (US), the extent to which fiduciary duties *require* or *allow* FIs to manage exposure to climate-related risk or to mitigate the systemic risk and impact of climate change depends on context.[83] Some interpretations are clear that at least considering climate-related risk as a factor in long-term value calculations is core to fiduciary duties. The UN Environment Programme Finance Initiative and the UN Principles for Responsible Investment (UNPRI) write that "investors that fail to incorporate ESG issues are failing their fiduciary duties and are increasingly likely to be subject to legal challenge."[84] The NZAOA commitment likewise states that members must embed the initiative's commitments "in order to meet [their] fiduciary duty to manage risks and achieve target returns".[85] The NZAOA writes that asset owners should engage with asset managers, "acknowledg[ing] fiduciary alignment, which includes the need to address climate change as a systemic risk to asset owner clients.[86]

In the United States, anti-ESG political rhetoric and legal challenges from state attorneys general and other public officials have chilled some FIs' climate ambitions.[87] In September 2022, a number of US banks threatened to exit GFANZ on the basis of perceived legal risks.[88] However, as noted by the UN Environment Programme Finance Initiative and UNPRI, above, FIs are also increasingly subject to legal and regulatory challenges for failing to meaningfully address climate change. In early 2023, BNP Paribas was sued for failing to comply with new human rights and environmental due diligence laws by supporting new oil and gas projects.[89] (FIs are also facing legal and regulatory challenges related to making misleading claims over climate-related activities, as discussed in Part 4.)

In the United States, corporate directors are afforded substantial deference in their business decisions, which constrains the ability to hold them liable for violating their fiduciary duty. The 'business judgment rule' affords a strong presumption that corporate directors are acting on an informed basis, in the best interest of the company.[90] The evidence is clear that climate change poses systemic and idiosyncratic financial risks, and that corporates face increasingly progressive regulations toward greater climate alignment as well as increasing reputational and legal risks of *inaction* in the face of the climate crisis. Accordingly, any legal challenges to FIs who choose to take climate action would face a steep hurdle.

In addition to misrepresenting the compatibility of climate action with FIs' fiduciary duties and with competition law, anti-ESG rhetoric also misrepresents the financial interests of FIs and their stakeholders in accounting for climate change. Indeed, as discussed in Section 1.a., many FI pledges and actions are oriented toward accounting for climate-related risks to maximize risk-adjusted returns. Nevertheless, the overarching financial interests of FIs do affect the scope of climate-related pledges and activities, and the anti-ESG rhetoric, misguided as it is, may exacerbate FIs' hesitance to address climate change in all ways (risk mitigation, alignment, and impact).

Ultimately, policy-makers and regulators should resolve these perceived conflicts with clarifications about the responsibilities of the financial sector to contribute to states' climate commitments and goals, and through regulation, subsidies, public finance, and other instruments that shape the opportunities, costs, and liabilities for climate-(mis) aligned activities. The net-zero financial-sector initiatives' guidance documents state that commitments are made with "the expectation that governments will follow through on their own commitments to ensure the objectives of the Paris Agreement are met."[91] Government regulation—both financial regulation and regulation of the real economy—is the public's tool to align the interests of profit-maximizing FIs with the public interest.[92] At the same time, FIs should be transparent about how their interpretations of their fiduciary duties and their financial interests shape their climate-related practices, including risk mitigation, climate alignment, and climate impact.

Summary Table

The following table summarizes how strategies, targets, and metrics can support real-economy decarbonization and achievement of the climate goals.

Topic	***Recommendations for FIs***
Decarbonizing the real economy	• Focus 'net-zero' commitments and initiatives on the reduction of real-economy emissions and on reducing demand for fossil fuels throughout other sectors in the economy, whether directly or indirectly. • Look to each company's strategy, investments, and operational plans to assess decarbonization progress along science-based pathways, with offsets restricted to residual emissions.
Shift from portfolio alignment to real-economy outcome	• Develop a strategy of impact based on FIs' levers to impact the real economy (rather than focusing on decarbonizing a portfolio). • Develop and use financed emissions metrics that represent real-economy change as a result of strategic financing and engagement, including transparent attribution analysis.
Avoid the pitfalls of emission-target setting	• Plan for a no-offset pathway for all sectors. For non-abatable residual emissions, use high-integrity, rights-respecting, removal-based offsets. • Prioritize absolute science-based emissions targets over emissions-intensity targets to orient strategy; keep emissions-intensity targets for specific uses (specific sectors and for comparison purposes). • Use existing sectoral pathways to specify short- and medium-term targets (e.g., 2–3 years, and 2030), in addition to long-term targets, that align with the IPCC's recommendation that global emissions peak by 2025. Contribute to developing further granular sectoral pathways, as needed (see Part 4). • Honestly and rigorously select base years that align with stated goals and IPCC recommendations. • Measure and report disaggregated GHG emissions by emission type; work with financed entities to enable the disaggregated calculations.
Holistic approach	• Ensure commitments and initiatives cover all financial services, including capital markets underwriting in sectoral policies. Carefully specify and explain the implications of any scope of coverage limited to a subset of assets or products. • Explain when targets are limited because of the lack of robust data or methodologies for certain asset classes and sectors. • Require portfolio companies to undertake an equally holistic approach.
Legal obligations	• Explain how interpreted fiduciary duties and financial interests shape FIs' climate-related commitments and practices.

Part 2. Stop Direct and Indirect Lobbying, Shift Finance, and Use Your Influence

Part 2 of this report discusses how financial institutions can and should contribute to, and not undermine, climate goals.

A. Stop Direct and Indirect Lobbying Activities Against Climate Action

Government action is necessary for a successful energy transition and for meeting climate goals. Governments, through their policies, regulations, and public financing, shape markets, assign costs and liability, de-risk and enable financing, support research and development, leverage private finance, price risks, and otherwise organize an entire economy, including public and private actors. Government policies also can (and should) address both the supply side and demand side of decarbonization pathways, and apply to both publicly traded and privately owned companies to avoid leakage, transferred emissions, and misaligned supply and demand. Thus, while voluntary and corporate-led initiatives play a role in achieving goals (as discussed in sections B and C below), they are inherently limited in their potential to achieve economy-wide transformations. Only government action can put us on a path toward a 1.5°C trajectory, enabling the meaningful participation and alignment of the financial sector. Government policy is also the most important determinant of corporate performance on sustainability issues,[93] and public policies apply to all types of actors, both publicly traded and privately owned.

One of the most important ways that FIs can accelerate the energy transition—mitigating their exposure to climate risk, creating clearer pathways for private finance, and reconciling potential conflicts between fiduciary duty and climate action—is to stop lobbying against climate action, and to require that their clients and portfolio companies do the same.

KEY GOVERNMENT ACTIONS NECESSARY TO ACHIEVE THE ENERGY TRANSITION INCLUDE:[94]

- Determine the national roadmap to achieve net-zero emissions in line with the Paris Agreement.
- Translate the national roadmap into intermediate and sector-specific emission-reduction goals and timelines.
- Invest directly in parts of the energy system, including power transmission, public transportation, and building retrofitting, and ensure adequate funding for states and cities.
- Determine land-use patterns in both urban and rural areas, including but not limited to zoning public land for energy infrastructure.
- Enact clean-energy standards for electricity, vehicle-performance standards, and energy-efficiency standards for appliances and industrial equipment to guide sector and market transitions.
- Provide carefully designed incentives, financing, and guarantees to the private sector to accelerate the development of new technologies and enable private investments, and phase out direct and indirect subsidies to the fossil fuel sector.

- Fund research into new technologies necessary for energy generation and its efficient use and storage.
- Implement policies to support a just transition, including a consideration of the differential impacts on workers and communities.
- Specify an adequate social cost of carbon, and implement carbon pricing in select areas for both public policies and market-based mechanisms to guide necessary emissions abatement.
- Promulgate disclosure and reporting requirements for the private and financial sectors that incentivize absolute emissions reductions.
- Stop licensing new coal, oil, and gas projects as well as new coal power plants.

FIs already decisively shape politics. The financial sector is one of the largest contributors to political campaigns in the United States, and funds contributed to lobbying have also soared in the past decade. In 2022, FIs' total lobbying spending in the United States exceeded USD 663 million (of USD 4.11 billion in total lobbying spending),[95] and political payments made to members of Congress during the election cycle amounted to USD 303 million[96] (both amounts increased more than 50% since 2006;[97] see Figures 1 and 2).

The lack of transparency in corporate influence in politics makes it difficult to say definitively how FIs are using their direct influence and engagements on climate-related measures. However, an InfluenceMap assessment of the lobbying positions of 80 FIs shows that, both directly and through their industry associations, many FIs are more 'obstructive' than 'supportive' of climate policy.[98] For instance, the Bank Policy Institute, a lobbying group, recently submitted public comments to federal bank regulators in the United States urging them not to take their climate pledges seriously and, accordingly, to scale back their proposal to require banks to ensure their climate pledges are consistent with internal strategies and risk-related statements.[99] Moreover, of the 30 largest listed FIs assessed by InfluenceMap, half are "members of real-economy industry associations which have lobbied directly in line with fossil fuel interests, including the US Chamber of Commerce and the American Gas Association."[100]

Figure 1. **Lobbying efforts by FIs (2022 versus 2006, in USD)**

	2022	*2006*	*Increase in 15 years*
Accountants	16,890,000	10,416,000	62.15%
Commercial banks	64,822,888	39,628,357	63.58%
Credit unions	9,673,068	3,950,000	144.89%
Finance/credit companies	37,604,494	18,384,433	104.55%
Hedge funds	8,630,000	1,590,000	442.77%
Insurance	158,454,609	133,555,508	18.64%
Misc. finance	47,006,053	23,331,952	101.47%
Mortgage bankers and brokers	11,885,000	42,028,161	-71.72%
Payday lenders	5,005,000	1,710,000	192.69%
Private equity and investment firms	19,570,000	3,583,493	446.12%
Real estate	135,572,239	80,461,473	68.49%
Savings and loans	890,000	3,625,025	-75.45%
Securities and investment	137,779,163	65,625,809	109.95%
Student loan companies	4,366,401	5,607,000	-22.13%
Venture capital	4,908,880	3,767,623	30.29%
TOTAL FIs	**663,057,795**	**437,264,834**	**51.64%**

Figure 2. **FIs' political payments to members of Congress during the 2022 and 2006 election cycles, in USD**

	2022	*2006*	*Increase in 15 years*
Accountants	10,054,674	8,713,747	15.39%
Commercial banks	16,663,292	17,646,301	-5.57%
Credit unions	3,235,724	3,367,896	-3.92%
Finance/credit companies	6,319,484	5,507,094	14.75%
Hedge funds	9,857,820	2,951,412	234.00%
Insurance	34,642,005	25,171,537	37.62%
Misc. finance	15,044,837	8,135,187	84.94%
Mortgage bankers and brokers	5,328,009	4,615,593	15.43%
Payday lenders	912,437	844,243	8.08%
Private equity and investment firms	24,613,824	5,551,904	343.34%
Real estate	68,684,400	50,960,224	34.78%
Savings and loans	241,154	1,261,7535	-80.89%
Securities and investment	95,319,776	50,991,318	86.93%
Student loan companies	329,677	1,173,600	-71.91%
Venture capital	12,065,121	4,295,063	180.91%
TOTAL FIs	**303,312,234**	**191,186,872**	**58.65%**

The financial sector is not alone in obstructing legal and regulatory efforts to tackle climate change. One study calculates an estimated social cost of USD 60 billion resulting from corporate lobbying against a specific climate regulation in the United States.[101] Industry associations and coalitions such as the American Petroleum Institute and the International Petroleum Industry Environmental Conservation Association played significant roles. The latter, for example, played a key role in coordinating a campaign designed to delay measures to control fossil fuel production from as early as 1987.[102] Several guides for companies and investors call for them to review the Paris alignment of trade associations' lobbying activities and withdraw from those that are misaligned.[103] However, a November 2022 Ceres report found that only 8% of the 100 largest US companies have conducted an internal assessment of their trade associations' climate-policy alignment and that only 3% disclose they have taken action to address the misalignment of their trade associations and evolve their climate-policy positions.[104]

The UN HLEG report states that "non-state actors cannot lobby to undermine ambitious government climate policies either directly or through trade associations or other bodies," and that non-state actors must "align their external policy and engagement efforts, including membership in trade associations, to the goal of reducing global emissions by at least 50% by 2030 and reaching net zero by 2050." [105]

Some of the GFANZ alliances and standard-setters have increasingly acknowledged the need for more concerted efforts to bring FIs' lobbying activities, and those of their portfolio companies, into alignment with climate goals. A 2022 NZAOA paper acknowledges "that there is a significant gap between best practices for net-zero-aligned lobbying and current corporate behaviours" and emphasizes that investors can have an impact on driving decarbonization "by integrating corporate climate lobbying expectations in their existing engagement dialogues with companies."[106] An April 2023 NZAOA document "recognises that members can only achieve their net-zero goals if broader society also decarbonises, which will require supportive policy and regulatory environments," and calls on its members to advocate for "stronger public policy that supports decarbonisation and designing investment stewardship practices so as to hold portfolio companies accountable for the alignment of their climate policy engagement with their climate commitments."[107] NZAM and the Paris Aligned Investment Initiative (PAII) make clear in their commitments that any policy advocacy by signatories should support achieving global net-zero emissions by 2050 or sooner.[108] The NZAOA, the Investor Agenda, and SBTi explicitly recommend FIs use influence within, and ultimately cut ties with, non-1.5°C-aligned trade associations.[109]

Despite these recommendations, the InfluenceMap analysis shows no notable shift among the largest FIs with respect to their industry association membership, nor public commitments with respect to the climate activities of those associations.[110]

Some advocates and scholars have noted that advocating for economy-wide regulations is actually in the financial interest of universal owners, who will be affected by the widespread economic costs of climate change[111] but do not have the same tools, knowledge, incentives, or capabilities to engage with individual companies as banks and asset managers do.

As scholars Goshen and Hamdani wrote,

> If institutional owners are not cynically virtue signaling … but are truly interested in averting the systematic risk of climate change, they should recognize that the government is better equipped for systematic stewardship. All stakeholders should focus on urging institutions to channel the hundreds of millions of dollars they spend on political donations and lobbying to pressure the government for a comprehensive and effective energy policy. Universal owners' political capture machines should be repurposed to promote government policies that further climate goals.[112]

The same is true for all FIs and should be a central tenet of the GFANZ alliances and similar efforts.

Summary Table

Institution	***Action***
All FIs	Align all internal direct and indirect lobbying and political activities with the goals of the Paris Agreement, including by • Ending any direct lobbying or political activity that undermines legal and regulatory efforts on aligning with 1.5°C or that would delay climate action. • Ending memberships with trade associations and coalitions whose activities are undermining climate action, including blocking fossil fuel phase-out. • Requiring financed and investee companies to do the same.

B. Shift New Finance to Achieve the 1.5°C Trajectory

The most decisive and important role for the financial sector in accelerating the energy transition is its ability to mobilize the trillions of dollars needed to achieve the climate goals, closing the USD 5 trillion annual climate-financing gap.[113] The emphasis for the financial sector, therefore, should be on how *new finance* is being directed and whether new finance is contributing to and not undermining a rapid and just transition.

Much of the focus of 'climate alignment' by investors has been on secondary markets, where securities already sold by a company are traded among secondary purchasers. In addition to divesting high-emitting assets, 'sustainable finance' "has largely consisted of a taxonomic exercise that aims at labelling *old* finance (debt and equity finance already emitted and exchanged on secondary markets) under various declinations of sustainability (socially and/or environmentally responsible, green, ethical, etc.) designed to match a variety of investors' preferences."[114] These divestments and labels do not influence the capital stock of the target companies. What does systematically influence the capital stock of target companies is access to new capital (or capital available on better terms)[115] on primary markets, through initial public offerings (leveraging new capital in the form of equity), and through new bond issuances (new debt capital) for established publicly listed companies. This section describes how new finance needs to rapidly transition to accelerate global decarbonization. (Section 2.C. describes how FIs can use their influence with financed entities in existing portfolios to support their transitions in line with a 1.5°C trajectory).

This section describes how FIs should

- End financing for fossil fuel exploration and expansion
- Condition new financing on robust 1.5°C alignment, especially in the financing of fossil fuel projects, high-emitting sectors, and sectors exposed to deforestation risk
- Shift new capital flows toward achieving climate goals.

a. Ending New Finance for Fossil Fuel Exploration and Expansion

The 2021 IEA Net Zero by 2050 scenario showed that, after 2021, any investment in new coal mines, unabated coal power plants and oil and gas fields would be incompatible with a 1.5°C scenario.[116] The IEA notes that oil and gas demand "could be met without approving the development of any new long lead-time upstream conventional oil and gas projects."[117] The UN's annual Production Gap report in 2021 further estimates that by 2030, under current projections, the world would exceed fossil fuel production levels compatible with the carbon budget for a 1.5°C scenario twice over,[118] contributing to lock-in and stranded asset risk. In order to meet the global climate targets, therefore, not only must any new exploration of fossil fuels cease immediately but a significant portion of already developed reserves (actively producing or under-construction oil and gas fields and coal mines) must remain unexploited,[119] and some fossil fuel-based production and the most carbon-intensive power-generation assets must be phased out ahead of their economic life.[120] As the UN HLEG November 2022 report succinctly summarized, "There is no room for new investment in fossil fuel supply and there is a need to decommission and cancel existing assets."[121]

The IEA acknowledges that "some parts of the existing fossil fuel infrastructure perform functions that will remain critical for some time, even in very rapid energy transitions."[122] This is typically the case for gas infrastructure to capture associated gases that are currently flared, vented or leaked. Currently, this wasted gas accounts for 7% of global gas consumption,[123] indicating a missed opportunity to use the gas for energy consumption and leading to an enormous amount of emissions (between 12% and 26% of scope 3 emissions from oil and gas).[124] In cases where gas infrastructure remains critical, financing should be first directed to projects that take advantage of existing infrastructure with idle capacity or those that can be converted to hydrogen infrastructure to limit the lock-in of capital in fossil fuel infrastructure.[125]

Currently, despite public net-zero pledges and emission-reduction targets, most oil and gas companies continue to invest in both exploration for new reserves and expanding production. These are correlated because the companies' overall production naturally declines if existing reserves are not being replaced. These investments are inconsistent with a 1.5°C trajectory.[126] Only three companies (Shell, TotalEnergies, and ENI) have public plans for oil production to decline by 2030 (though the plans are vague and continue to include increased gas production, which is inconsistent with a 1.5°C trajectory).[127] Only one company, BP, announced a plan to cut both oil and gas production by 40% by 2030, which it reduced to 25% in February 2023, in light of high oil and gas prices.[128]

Continued financing of any firms that have plans to expand exploration or production is inconsistent with a 1.5°C alignment. Yet debt capital (bank loans and bonds) accounts

for 90% of new capital flows into the oil and gas sector, providing liquidity for fossil fuel expansion.[129] None of the GFANZ alliances requires members to stop financing companies involved in fossil fuel expansion. FIs can use Urgewald's Global Coal Exit List[130] and Global Oil and Gas Exit List[131] to identify companies that are not aligned with a 1.5°C trajectory either because of expansion plans or the absence of production reduction plans. These lists, already used by many FIs worldwide as well as by major institutions such as the French Financials Market Authority, are updated annually, and data is provided on the 1.5°C scenario overshoot impact of expansion plans. Other lists are available to FIs through data providers, but most do not contain the same data granularity and do not assess whether companies are still developing fossil fuels.[132]

b. Financing Business and Sector Transitions

Beyond policies to stop financing companies involved in new fossil fuel exploration, FIs should ensure that all other new financing across the economy is consistent with—and supportive of—the rapid transition toward a 1.5°C scenario. Each sector merits its own analysis of what 1.5°C alignment looks like; some sector pathways are already more developed than others (see Part 4). Prior to the allocation of any new capital, FIs can interrogate the business plans of the target company to ensure 1.5°C alignment and build conditions and guardrails into financing instruments. While all sectors have relevant transition pathways, three sectors and areas of business activity stand out with respect to the importance of such an analysis, as well as to the need for new financing solutions: fossil fuel projects, high-emitting sectors, and sectors exposed to deforestation risk.

Managed Phase-Out of Fossil Fuel Projects

Early closures of high-carbon infrastructure will require concerted planning and financing for proper decommissioning, remediation, and a just transition, especially when regulations do not require companies to provision for decommissioning.[133] FIs could help manage phase-out and early closures through dedicated financing products, for instance through the use of transition bonds where proceeds are earmarked for asset retirement (and closely externally audited to avoid the risk of greenwashing).[134] Through access to a lower cost of capital and/or access to new cashflows, dedicated financing mechanisms "can reduce the total returns needed from operations over the plant's remaining life, deliver risk-adjusted returns for investors, lower costs for customers and taxpayers on an accelerated timeline, and free up capital for investment in the plant's early retirement, replacement, or retrofit."[135] On average, a 3% decrease in the cost of capital is necessary to induce the early decommissioning of roughly one third of the global coal plant fleet for advanced economies and China, and a 6% decrease is needed for such early decommissioning in developing countries.[136] As in other critical areas of climate finance, the most effective financing strategy is for public and private finance to work in a coordinated way; mechanisms for blended finance for early decommissioning are emerging with the advent of Just Transition Energy Partnerships, also discussed in Section 2B.c. below.

Although the need for the private sector to support a just transition alongside managed phase-out is widely recognized, including by the UN HLEG report[137] and the International Labour Organization,[138] practice is still woefully lagging. Among 180 high-emitting companies

benchmarked in 2021, the World Benchmarking Alliance found the vast majority fail to demonstrate efforts toward a just transition.[139] At the project and company level, FIs should support the development of place-based plans to achieve a just transition for workers and communities through social dialogue, including budgeting for worker compensation and retraining and remediation costs.

In a statement coordinated by UNPRI in April 2020, 161 investors representing USD 10.2 trillion in assets under management "commit[ed] to take action to support the just transition by integrating the workforce and social dimension in [their] climate practices."[140] This group committed to drawing on the recommendations of UNPRI's 2018 *Climate Change and the Just Transition: A Guide for Investor Action*, which, among other things, recommends "working with portfolio companies to make company-level capital allocation decisions that support a just transition" and for real assets investments, "target[ing] investment in communities and regions affected by the transition to deliver positive social and environmental impacts."[141] However, the statements and recommendations for FIs' action to achieve a just transition remain high level and include lists of optional strategies rather than clear guidance on what action they should prioritize in the short term.

While GFANZ highlights the need for FIs to help manage the phase-out of fossil fuel projects, its recommendations are disclosure-based and lack specific recommended best practices or timelines, giving firms the flexibility to set low-ambition targets. However, GFANZ's workstream on Managed Phaseout of High-emitting Assets has indicated it will develop a framework and support the development of tools to identify assets relevant for Managed Phaseout as well as financing mechanisms, in order to establish Managed Phaseout as part of net-zero transition planning.[142]

Decarbonizing High-Emitting Sectors

As of 2020, worldwide fossil fuels are mostly consumed by industry (39.5%), transport (37.3%), and buildings (16.7%). Industry and buildings also consume electricity (10% and 33% of their final energy demand, respectively), and worldwide electricity still mostly relies on fossil fuel generation.[143] Rapidly decreasing the demand for fossil fuels is as important as limiting the supply of fossil fuels,[144] including to avoid supply crunches and price hikes. Government plans, clear regulations, and public finance (*as discussed in* Box 1 in Part 2A) are critically needed to curb demand for fossil fuels at the required pace, but FIs can play an important role in both insisting on—and financing—credible 1.5°C-aligned business strategies that reduce fossil fuel demand.

For instance, according to the Mission Possible Partnership, the credible 1.5°C pathway of Direct Reduction Iron-Electric Arc Furnace (DRI-EAF) steel production requires that the production of steel using natural gas start peaking before 2025 and be replaced by production using 50% of Biomethane or 50% of green hydrogen. By 2040, all production consistent with a 1.5°C scenario uses DRI-EAF relying on 100% green hydrogen and green electricity.[145] Retrofitting steel capacity as well as building new low-carbon steel capacity is costly;[146] transition bonds, involving the earmarking of the use of proceeds for transition activities, can help lower the cost of capital and increase access to sources of cash flows (subject to external auditing and accountability mechanisms) to the various hard-to-abate

sectors (including steel, cement, petrochemicals, shipping, and aviation).[147] Several FIs have shown interest in developing the transition bonds market under the leadership of the International Capital Market Association.[148]

Decreasing Deforestation

Along with the phase-out of fossil fuels, the world must end deforestation and the destruction of natural ecosystems. Deforestation both releases stored CO_2 back into the atmosphere and removes the trees that would have been available to absorb atmospheric CO_2. Between 2001 and 2019, according to the National Aeronautics and Space Administration, the loss of forests through deforestation and fires led to a release of an average of 8.1 billion metric tons of CO_2 per year.[149] Certain high-risk sectors contribute the most to deforestation, such as soy, beef, palm oil, pulp and paper, rubber, and timber.[150]

GFANZ encourages the members of its net-zero alliances to "strive to eliminate commodity driven deforestation from their investment and lending portfolios" by "assess[ing] exposure to deforestation risk, establish[ing] financing policies for forest-risk agricultural commodities, and disclos[ing] deforestation mitigation activities."[151] Such policies can build on the "No Deforestation, No Peat, No Exploitation" commitments commonly made by downstream companies, traders, mills and growers in agriculture,[152] which prohibit "financing for any project that involves the degradation or loss of natural forests or other natural ecosystems" including peatland.[153] Several additional resources, specific to commodities or to deforestation more generally, provide resources on corporate practices and means of engagement.[154]

Despite these guidelines and recommendations, FIs' adoption of deforestation policies and engagement remains patchy. In 2022, Forest 500 analyzed 150 of the FIs most exposed to deforestation. They found that 92 of those FIs (61%) did not have deforestation policies; together, those 92 FIs provided USD 3.6 trillion in finance in 2022 to companies involved in "forest-risk supply chains."[155] Only 17% of the 557 GFANZ members (as of January 2023) recognized deforestation as a risk, while only 6% "have signed a commitment to eliminate commodity driven deforestation from their portfolios and joined the Finance Sector Deforestation Action coalition."[156] While, as discussed above, identifying deforestation as a risk is a distinct (if overlapping) approach from proactively ending deforestation, and no coalition or initiative provides adequate guidance on the latter, these statistics reflect the relatively low engagement of FIs with deforestation throughout the supply chains of their financed entities. As envisioned by the November 2022 Finance Sector Deforestation Action's "Financial Sector Commitment Letter on Eliminating Agricultural Commodity-Driven Deforestation," FIs should condition new financing to sectors exposed to deforestation risk on the companies' having rigorous deforestation policies and systems to monitor their implementation.[157]

c. Reorienting New Capital Toward the Transition

Finance to accelerate climate-related goals has increased at a cumulative average annual growth rate of 7% between 2011 and 2021.[158] Meeting the annual financing gap would require a cumulative average annual growth rate of 21% by 2030.[159] The IPCC 2022 report

found that investment in the shift to a low-carbon world is about six times lower than it needs to be.[160]

The IEA indicated in its 2022 World Energy Outlook report that while "continuing investment in fossil fuels is needed to keep supply and demand in balance while energy transitions are in progress … the extent of this requirement is entirely dependent on the speed at which clean energy investment scales up. In the [Net Zero Emissions] Scenario, for every USD 1 spent globally on fossil fuels in 2030, more than USD 9 is spent on clean energy."[161] Investments are needed both to massively scale commercially available solutions such as renewable energies and heat pumps and to develop new technologies that will be responsible for more than 40% of GHG emission reductions in 2050.[162] Investments in restoring nature may also be helpful and are discussed in Annex B.

According to a study by BloombergNEF, to support the world economy's achievement of the 1.5°C scenario, the ratio of clean-energy lending and equity underwriting by banks relative to fossil fuels needs to reach 4 to 1 by 2030, whereas for the 1,142 studied banks, it lay between 0.8 and 1 at the end of 2021 (with the Net-Zero Banking Alliance banks hardly performing better).[163] The underwriting activities for low-carbon activities have been mostly supported by "small, climate-focused banks, national banks or multilateral development banks."[164] A Cambridge University study commissioned by BNP Paribas indicates that banks are lagging on transition financing in part because of their passive approach to fielding financing requests, rather than identifying opportunities. While more work is needed to prepare a pipeline of bankable projects, particularly in emerging economies, the Cambridge University study also found that, even under current policy contexts, banks over-rely on standard approaches, products, clients, and opportunities to minimize time and effort and spend comparatively less time on identifying new opportunities or creating enabling financial products.[165]

Net-zero financial-sector initiatives' commitments and recommendations toward reorienting new capital are inadequate. For example, the NZAOA asks members to develop financing transition targets and "ideally show a positive trend in climate solution investments over time,"[166] which does not reflect the urgency and scale of increased financing needed.

For many sectors in transition,[167] sustainability-linked bonds[168] and loans to fund low-carbon technology interventions, renewable energy deployment, decommissioning, and other capital expenditures related to the energy transition could lower the cost of capital for necessary transition finance.[169] Private equity and venture capital can be further dedicated to portfolio companies that are driving innovative technologies or interventions. Constraints to the scale-up of these financial instruments include the lack of stringent standards for the use of proceeds and the lack of standardization around the definition and measurement of investments in climate solutions. This lack of standardization allows for the misuse of funds raised through these instruments and undermines accountability,[170] and the lack of robust definitions and means of measurement limits the overall strategic effectiveness of private equity and venture capital portfolios to address the range of financing needs at scale. Improved pricing structures (conditioning the cost of capital on the achievement of key performance indicators [KPIs]) would increase both the effectiveness and uptake of financial instruments designed for climate impact.[171] More efforts are urgently needed

to identify and define the investments—by sector, mechanism, and use—that contribute effectively to climate solutions, and to create enabling environments to bring them to scale. FIs can help accelerate that discussion.

Scaling the financing needed to close the investment gap—regionally and globally—will require public policies to leverage private capital, de-risk investments, create markets and opportunities, and complement finance with supportive technical support.[172] The UN HLEG report explains that there is an urgency to craft "a new deal for development that includes financial institutions and multinational corporations working with governments, Multilateral Development Banks and Development Finance Institutions to consistently take more risk and set targets to greatly scale investments in the clean energy transition in developing countries."[173] Indeed, a reform of international public finance is overdue. In particular, developing countries need higher levels of concessional debt finance characterized by longer loan maturity, lower interest rates, and extended grace periods to be able to invest in the enabling infrastructure for investments and provide sovereign guarantees.[174] Multilateral development banks (MDBs) also have a role in providing credit guarantees or currency guarantees, backed by their preferred creditor status.[175] For this to happen, it is necessary to reassess MDBs' and other development finance institutions' (DFIs') profitability targets and "transparently analyz[e] whether the capital adequacy ratio is too conservative and the extent to which it could be lowered without compromising the AAA rating given by the credit rating agencies."[176] It also entails reviewing the International Monetary Fund–World Bank Debt Sustainability Analysis, which conflates solvency and liquidity,[177] and increasing debt-to-GDP ceilings, provided certain conditions[178] are in place.[179]

FIs can also collaborate with MDBs and DFIs to develop large-scale financial innovation mechanisms and platforms, such as the Global Innovation Lab for Climate Finance,[180] to craft bankable models that unlock private investment by addressing the key risks raising the cost of finance.[181] Climate Investor One is another example of a "financing facility for early-stage project development, construction financing, and refinancing to fast-track renewable energy projects in developing countries," targeting an installed capacity of 1,700 megawatts per year; it has already mobilized investment from six financial institutions.[182] Similarly, Goldman Sachs has joined the Asian Development Bank and Bloomberg Philanthropies in setting up a Climate Innovation and Development Fund focused on innovation across the sustainable transport sector in Asian markets.[183] Co-investment with MDBs can also involve purchasing MDB bonds or buying the sustainability-linked bonds of governments whose proceeds are earmarked for the sustainable transition,[184] or supporting country-led Just Transition Energy Partnerships, which include mechanisms to crowd in private sector capital.[185]

Despite the attention to the tremendous financing and investment gap for the global energy transition, the patchwork of actions by local and national governments and by companies and FIs still lacks a coherent framework. Complementary efforts are needed to identify the institutional arrangements to finance the energy transition, including the mix of public and private finance, the respective roles of the MDBs, commercial banks, and investment funds of various kinds, and the optimal financing mechanisms at project and regional levels.

Summary Table

Topic	Recommendations for FIs
End financing for fossil fuel expansion	• Deny capital to companies involved in fossil fuel expansion, including new debt capital (bonds), or underwriting for initial public offerings, bond, and equity issuances.
Condition new financing on robust 1.5°C alignment	• Condition new finance on the existence of a robust 1.5°C-aligned plan among carbon-intensive sectors. • Develop and invest in new financing products to accelerate the transition away from a fossil fuel-based economy, such as transition bonds (subject to external auditing and accountability mechanisms). • Require energy- and utility-sector portfolio companies/clients to » End capital expenditure for new fossil fuel exploration projects and new coal plants. » Limit financing for new oil and gas infrastructure to critical infrastructure projects only, such as those that capture wasted gas. Investments should be prioritized and designed to avoid locking in capital in fossil fuel infrastructure. » Plan for the managed phase-out of existing fossil fuel production and coal power generation assets ahead of their economic life. » Achieve a just transition for workers and communities through social dialogue, including budgeting for worker compensation and retraining and remediation costs. • Condition new financing on a commitment to Zero Deforestation. A No Deforestation, No Peatland, No Exploitation commitment can be adopted and implemented as a starting point for the zero-deforestation policy.
Shift new capital flows toward achieving climate goals	• Reorient new capital toward the transition by » Massively scaling investments to commercially available solutions and to developing new technologies to support GHG-emissions reductions. » Financing MDBs, which are well placed to leverage private finance and to complement finance with technical support. » Initiating complementary efforts to identify the institutional arrangements to finance the energy • Scale existing instruments such as sustainability-linked bonds and loans that fund and scale decarbonization and clean energy technologies. • Support international reform of MDBs and DFIs by sharing expertise and developing large-scale financial innovation platforms.

C. Use Influence With Financed Entities to Support Their Transitions

In addition to decisions about allocating and conditioning new finance, FIs hold significant influence with their portfolio companies (and asset managers, in the case of asset owners), and can have significant impact in shaping their portfolio companies' and clients' strategies, operations, capital expenditure, and lobbying activities to contribute to achieving the 1.5°C scenario.[186]

Supporting companies to rapidly transition along 1.5°C pathways requires looking deeper than companies' targets or pledges to companies' strategies and business plans, actual

production and capital expenditure plans,[187] and their reliance on offsets or carbon capture or removal in both setting and meeting their targets.[188] All strategies and business plans should be aligned with a robust transition plan, describing how the company will transition according to its sector's pathway using commercially available sector-specific technologies.

GFANZ provides a useful list of questions to analyze the credibility and feasibility of robust transition plans for portfolio companies and their industrial sectors, which should support FIs' active engagement with companies:

- *Has the pathway been validated by the scientific community for credibility around temperature alignment?*
- *Have the model and scenarios been peer reviewed? What are the current use cases of the scenarios (e.g., alignment, risk)?*
- *Has the pathway been submitted for international model intercomparison exercises (e.g., IPCC database)?*
- *Has the pathway been evaluated by industry and other key stakeholders (e.g., regulators) to assess its commercial feasibility?*
- *How are just transition and fair share considered in regional/country-specific pathways?*[189]

According to GFANZ, FIs can use sectoral pathways "to anticipate investment flows needed to bring on new technologies and to replace existing assets"[190] (see Section 2B on new finance). Of course, while a number of sectoral pathways have been developed, there are gaps in current pathways. For instance, roadmaps or pathways are missing for certain sectors or geographical regions (see Part 4 for further discussion).

The effectiveness of FIs' engagement with portfolio companies and clients depends on a range of factors, including the type of engagement, the extent of the engagement, the resources leveraged, and how public the engagement is. Notably, even when individual FIs cannot alone change business practices or the availability of finance to non-1.5C-aligned companies, FIs can influence societal and market assessments of risk, and their public commitments shift norms and practices. Moreover, the fact that the potential impacts of any one FI may be more limited, or the fact that finance may be available from less-responsible financiers, does not absolve individual FIs of their individual responsibility for their policies and practices.

This section lays out effective engagement strategies for FIs to shift the practices of their clients and portfolio companies.

a. Engagement Tools and Strategies

Tools for Commercial Banks to Influence Their Clients' Transitions

As discussed above, no bank can be considered as aligned with climate goals if it finances, through loans or underwriting, the expansion of fossil fuel production and consumption (except for the limited cases for gas infrastructure as discussed in Section 2B.a. above). Beyond that baseline requirement, banks can use their influence with new and existing clients to drive 1.5°C-aligned behavior.[191] Banks can condition financing—or the terms of

financing through detailed covenants—on their clients' setting and meeting robust transition plans, on the basis of sectoral policies for 1.5°C alignment (see Section 2B.b). Traditionally the objective of covenants is to protect the debt's holder against reimbursement default.[192] Given that climate is a material financial risk that could threaten the financial health of the client company, conditioning financing on transition plans is compatible with the logic of covenants.[193] Further, banks can require express and binding representations from their clients with respect to climate commitments and compliance with laws and standards, with accelerated repayments following a breach of such warranty.[194]

Tools for Asset Managers to Influence Their Portfolio Companies' Transitions

Asset managers, especially large passive-asset managers (such as BlackRock, State Street and Vanguard), can have concentrated and long-term ownership of companies' debt and equity, meaning they are uniquely positioned to escalate the impact of various engagement tactics.

Escalation strategies can differ by asset class. For debtholder engagement, there is an opportunity, particularly during critical moments of refinancing[195] to require debt issuers to include climate strategies and transition plans as part of debt obligations.

On the equity side, asset managers have a number of shareholder rights they can exercise to influence the real economy. First, they can submit or co-file shareholder resolutions or vote on resolutions submitted by other shareholders. Proposing and supporting shareholder resolutions not only indicates to the target company's management the expectations of shareholders with respect to climate action but helps to normalize industry-wide pro-climate business practices.[196] Notably, Rule 14a-8 of the Securities Exchange Act allows proposals to be rejected if they deal with a matter relating to the company's ordinary business operations; accordingly, proposals tend to be related to disclosures rather than to changes in business practices or real-world outcomes.[197] Even so, support for climate-related (and other environmental and social) proposals remains low among institutional investors, even among firms that tout their environmental and social credentials.[198] Importantly, shareholder resolutions are more likely to pass where companies perceive a likely threat of future regulation,[199] underscoring the importance for FIs to support public policies and regulatory enforcement in addition to putting pressure on companies on an ad hoc basis.

Companies also usually have standing votes for shareholders on directors, audited reports, and executive remuneration each year. Evidence suggests that voting against directors in annual proxy votes can be more impactful and resource-efficient than filing shareholder resolutions, even where the vote only gains a minority percentage of the total votes.[200] The PAII makes the recommendation to investors that "where a company is not on track to achieve its transition plan or targets set for two years or more, [they should] vote against the board, remuneration policy, annual report and accounts."[201] This tactic has gained traction in recent years and was reported widely when a campaign succeeded in replacing several members of Exxon's board during the 2021 proxy season.[202] LGIM implements a similar policy under its Climate Impact Pledge, voting against the directors of companies that do not comply with their minimum requirements for progress on climate in key high-emitting

sectors.[203] NGO Majority Action has been instrumental in identifying key directors for voting campaigns at companies that are not aligned with climate goals.[204]

Finally, asset managers that also own private equity assets have the most direct ability to influence real economy emissions by buying and restructuring non-1.5°C-aligned companies to ensure credible and meaningful transition planning for 1.5°C. Their longer time horizon as compared to public markets as well as their full ownership governance models grant them a strong lever. Yet, this opportunity has hardly been pursued by private equity enterprises so far.[205]

Tools for Asset Owners to Influence Their Portfolio Companies' Transitions

Many asset owners have more long-term interests than asset managers and recognize climate change-related system risk to the overall health of their portfolios. Asset owners have critical influence in the system, as both clients to asset managers and owners/lenders to companies. They can have impact by moving both sets of actors toward metrics for real-economy decarbonization.

Accordingly, asset owners can exert their influence over asset managers' engagement activities in at least two ways. First, they can select (or terminate) asset managers on the basis of their climate or other sustainability engagement strategies (which may be laid out in the asset manager's fund prospectus); the more publicly they do so, the more influential their efforts (as discussed in the next section). For example, Japan's Government Pension Investment Fund awarded mandates to LGIM and cut them for BlackRock after it publicly "raised the weighting of 'stewardship activities' in its selection criteria for passive equity managers" in 2017.[206] A 2022 NZAOA paper recognizes that "asset owners have a responsibility to pick those managers that best align their actions with asset owners' long-term interests, including climate change mitigation."[207]

Once in a business relationship, asset owners can also direct their asset managers with respect to the managers' engagement and voting practices.[208] The same NZAOA paper emphasizes that asset owners' engagement with their asset managers is critical to

> align [asset managers'] stewardship activities and public messaging with asset owners' long-term interests. This alignment asks asset managers to represent, as fiduciaries, that climate risk is not only a systemic financial risk to portfolios but an existential risk to the fundamental businesses of their asset owner clients.[209]

Beyond direct discrete engagements with companies, asset owners' interest in long-term growth across the whole economy also uniquely incentivizes them to push asset managers to publicly support climate action at sector-wide and cross-sector levels.

Asset owners' strongest lever to ensure asset managers use their engagement powers to achieve climate goals is the mandate they set with their asset managers. These mandates should explicitly and clearly state that the asset owner's objective is "to support real-world change towards net zero by 2050," in line with NZAOA alliance's commitment.[210]

Despite the influence that asset owners have with asset managers, their level of engagement remains low.[211] The Global Impact Investing Network (GIIN) has helpfully identified several constraints and challenges asset owners face in "pursuing impact alongside asset managers."[212] Among others, the GIIN sees shortcomings in asset owners' clear articulation of impact objectives, in the ability of asset owners to understand asset managers' impact-oriented strategies, in continued tensions between financial returns and other impact objectives, and in the limited ability to influence asset managers given established fund structures, among others. The GIIN gives guidance and positive examples to asset owners on ways to strengthen their engagement in the existing policy context, as well as "industry tools, resources, and infrastructure [that would] facilitate deeper consideration of impact."[213]

b. Increasing Engagement Impact

There are several ways in which FIs can make their engagements and levers of influence more impactful.

First, FIs should set clear targets, disclose engagement strategies and outcomes, communicate and execute escalation strategies, and have clear consequences for poor performance.[214]

Second, engagement processes are more likely to yield results if a company perceives that the process may threaten access to financial, reputational, or social capital,[215] or could result in the loss of insurance coverage and increased legal liability.[216] Certain companies, such as those that are consumer-facing, are more susceptible than others to public-facing stakeholder pressure.[217] Media coverage of FIs' capital-allocation decisions and engagement activities can help amplify the effect of both beyond the scope of their own portfolios.

Third, engagement is more impactful when it focuses on ends-based asks (those pertaining to direct outcomes) rather than the more common means-based asks (such as additional corporate disclosures or reporting).[218] Some early studies have found little or no correlation between disclosures and actual corporate environmental performance.[219]

Fourth, engagement across a sector or value chain (including with peer companies, suppliers, regulators, and customers) strengthens investors' abilities to both identify viable solutions and overcome the ecosystem hurdles to be tackled by policy-makers or through engagement across industries.[220]

Fifth, the likelihood of engagement success can be improved by acting collectively in coalitions, especially where the coalition has a high amount of AUM or proportion of stock or bondholding[221] (antitrust considerations with respect to collective action are briefly discussed in Section 1.f. above).

Summary Table

Institution	***Recommendations***
Commercial banks	• Actively engage with prospective and existing debtholders, making ends-based asks, particularly during critical moments of refinancing. • Require express and binding representations from clients regarding their 1.5°C alignment, accelerating repayments following a breach of such warranty. • Condition financing on publicly disclosed sectoral policies and expectations (for loans and underwriting) for ending fossil fuel expansion and for setting and meeting robust transition plans, and review compliance with ends-based asks. • Increase influence and shift norms by publicly disclosing » Debt-denial policies for fossil fuel expanders » Engagement criteria » Engagement objectives » Escalation tactics » Details of all engagement activities.
Asset managers	• Actively engage with debtholders, making ends-based asks, particularly during critical moments of refinancing. • Require debt issuers to include robust climate commitments as part of debt obligations. • Vote against directors, audited reports, and executive remuneration for 1.5°C non-aligned companies, such as those planning or facilitating fossil fuel expansion. • Align all shareholder resolution voting with a 1.5°C trajectory by submitting, co-filing, or voting on resolutions indicating expectations with respect to 1.5°C-aligned climate action and normalizing industry-wide pro-climate business practices. • Increase influence and shift norms by publicly disclosing » Debt-denial policies for fossil fuel expanders » Voting record » Details of all engagements. • For asset managers with private equity, buy and restructure non-1.5°C-aligned companies to ensure credible and meaningful transition planning.
Asset owners	• Influence asset managers to adopt the above approaches for influencing portfolio companies' transitions through » Selection/termination of asset managers » Requests for proposals that center climate impact » Ongoing evaluations: set targets and strategies for asset managers. » Public-facing announcements of asset manager selection and termination. » Mandates set with managers that explicitly state that the asset owner's objective is to accelerate climate action. • Vote against directors, audited reports, and executive remuneration for 1.5°C non-aligned companies, such as those planning or facilitating fossil fuel expansion, during the Annual General Meetings of publicly listed companies, and publicly disclose reasons. • Align all shareholder resolution voting with a 1.5°C trajectory. • Increase influence and shift norms by publicly disclosing » Debt-denial policies for fossil fuel expanders » Criteria, targets, strategies, and requirements for asset managers.

Part 3. Embed Accountability and Oversight at the FI Level and in External Initiatives

Despite the proliferation of net-zero commitments and initiatives among FIs, significant changes to align business plans and strategies with these commitments have lagged.[222] The first sections of this report articulated some of the reasons for this misalignment, especially when targets and strategies were misaligned with commitments.

As attention to the accountability gap grows, regulators are increasingly attentive to greenwashing. In the United States, the Securities and Exchange Commission has proposed a rule to combat greenwashing by investment advisors and investment companies[223] and has already brought investigations or actions against Deutsche Bank's investment arm, BNY Mellon Investment Advisor, and Goldman Sachs Asset Managers.[224] In the United Kingdom, advertising regulators have banned HSBC ads, saying they were "misleading" about the bank's efforts to cut emissions,[225] and in the European Union (EU), proposed draft rules would require companies to provide evidence to support their climate claims.[226]

In the UN HLEG's report, the Chair's note at the outset of the report is entitled "It's Time to Draw a Red Line Around Greenwashing."[227] The report itself was largely organized around two principles: that net-zero pledges and activities needed to be more robust and also more accountable. This section discusses this need for greater accountability to ensure the credibility of FIs' net-zero pledges, claims, and communications.

a. FI-Level Governance and Oversight

Achieving commitments and targets involves changing institutional behavior and internal change management. To be successful, commitments must be embedded in corporate governance, including at the board and C-suite levels, as well as in day-to-day management. Having in place clear internal oversight structures and mandates, incentives, and monitoring and review processes is necessary to ensure climate commitments are taken seriously by all the internal stakeholders who need to prioritize meeting them. Establishing effective grievance mechanisms to address complaints and whistle-blower protections is also critical to advancing accountability.

Boards are responsible for embedding climate commitments into an institution's purpose and strategy, setting objectives to guide and incentivize internal teams, and ensuring they are being implemented.[228] SBTi recommends FIs establish a climate governance structure, including making "portfolio alignment with the Paris Agreement a board priority—including explicit attribution of this responsibility within the board."[229] Only one net-zero financial-sector commitment calls for board review of climate targets,[230] and none requires board approval of their commitments to join or stay members. Chief executive officer commitments are uncertain with respect to their effect on strategy without board involvement.[231] This challenge is particularly salient for executive commitments to far-off net-zero targets, where signatories may

view them as 'next management's problem.'[232] Executives may feel protected, knowing that their commitments as individuals will likely not be legally binding on themselves or their companies.

To motivate executives to care about meeting climate targets, boards should also link executive remuneration to meaningful and stringent climate-related KPIs,[233] as suggested by the PAII Net Zero Investment Framework[234] and the Investor Agenda Expectation Ladder[235] but not required by any of the net-zero financial-sector initiatives. With climate risk increasingly recognized as a financial risk, a small but growing number of FIs have started to link remuneration to climate-related objectives.[236]

Effective grievance mechanisms and whistle-blower protections are also key elements of an FI's accountability architecture. Appropriately designed grievance mechanisms enable an FI to receive and address complaints of non-compliance with commitments from employees, researchers, civil society, and value chain actors regarding the FI's climate targets, performance, and the associated impacts. The UN Guiding Principles on Business and Human Rights set out criteria to ensure grievance mechanisms are effective,[237] which can be applied to designing grievance mechanisms that suit the climate context as well.

b. Accountability by Voluntary Initiatives

To the extent that the external methodologies, initiatives and alliances solicit and indicate member commitments, much more effort is needed to promote accountability. As described extensively above, none of the initiatives reviewed for this report require members to commit to driving real climate action, let alone the most effective implementation strategies to do so. Instead, the only true requirements are setting and publishing targets, annually disclosing progress, and paying membership fees.[238] Even the most robust net-zero financial-sector initiative, the NZAOA, offers that "if a member is unable to meet one or several of [its six] minimum requirements the member shall provide and disclose reasonable explanation as to why that is."[239] In other words, disclosure is required, not improved practices or real-world impact.

While GFANZ and its initiatives publish detailed guidance documents to support members in developing and implementing more meaningful strategies for climate action, none of the recommendations in these guidance documents are required for members. Stakeholders, including journalists and policy-makers, may understandably confuse these guidance documents with indications of the members' commitments and activities.

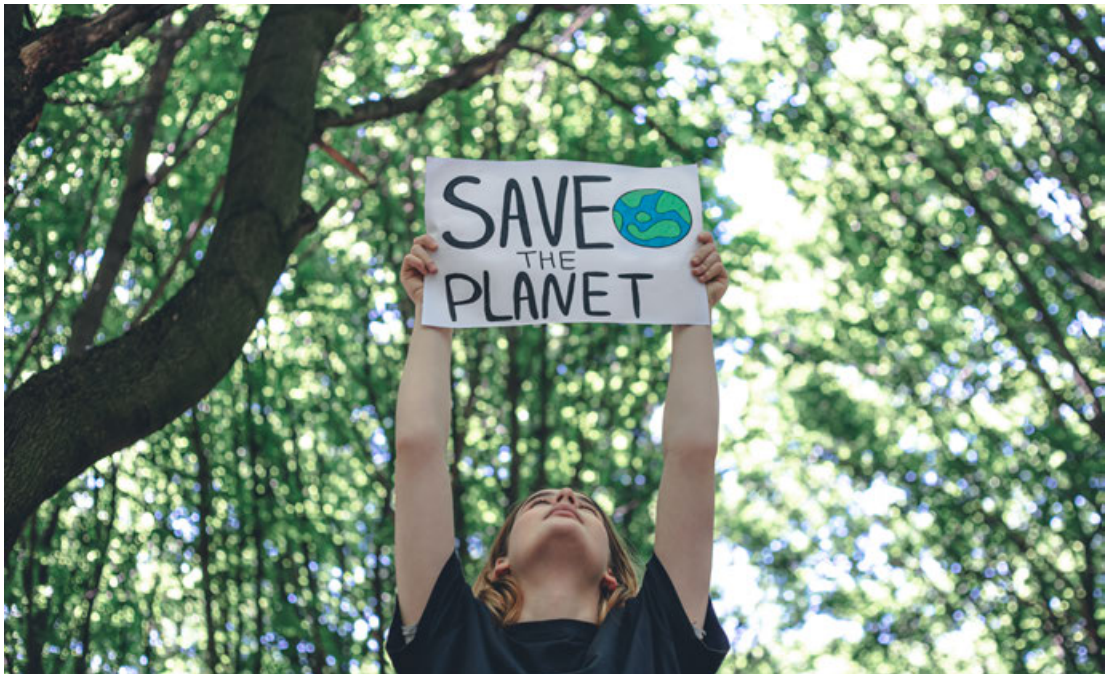
The GFANZ initiatives limit public access to information regarding their members' performance and the associated measures taken to hold them accountable. The NZAOA acknowledges it enters into non-disclosure agreements (NDAs) to ensure information about its engagements with members that fail to meet its minimum requirements, and any punitive measures it takes, cannot be communicated externally.[240] This practice has also been highlighted with regard to other private sector-led initiatives.[241] SBTi has been criticized for its use of NDAs with the companies that submit targets for verification, preventing the initiative from naming those whose climate targets have been rejected and explaining why any specific target has been approved or denied.[242] Agreements of this kind impede transparency, accountability, and the initiatives' credibility with key stakeholders and the

public. Best practice among financial-sector initiatives would involve publishing information about non-compliance among its members and taking action to hold members accountable.

Currently, the GFANZ initiatives lack the ability and necessary mechanisms to meaningfully hold members accountable. While some initiatives receive input from experts and environmental organizations through advisory committees,[243] the initiatives' members account for most or all of the seats on their highest-level governing bodies,[244] which may limit their ambitions, agendas, and accountability measures.

Initiatives would be better equipped to hold FIs accountable for their climate-related commitments, reduce greenwashing, improve the initiatives' credibility, and, ultimately, to drive impact if they supported independent audits, channels for third parties to report misalignment between commitments and practice, or an independent oversight mechanism. Initiatives could support their members by providing them with tailored recommendations for improvement or, where necessary, discontinue their participation where practices fail to improve over time.

The current accountability gap in net-zero financial-sector initiatives has been publicly acknowledged. In August 2022, after being criticized for not disclosing any sanctions against members that failed to follow through on commitments,[245] Race to Zero confirmed it would share more information on its new "compliance mechanism" aimed at driving "real world impact" that would apply to the GFANZ alliances in September 2022.[246] At the time, members of GFANZ's leadership expressed support for Race to Zero setting up a new compliance mechanism to "identify and remove members who fail to meet its criteria."[247] The independent accountability body was envisioned to be one "where civil society groups, including non-governmental organisations, could report financial institutions for not following Race to Zero's criteria."[248] Yet as of June 1, 2023, there were no further indications



that Race to Zero would set up such a compliance mechanism to review GFANZ members. In fact, in October 2022, GFANZ weakened its link to Race to Zero, no longer requiring members to meet its criteria as a condition of membership.[249]

Summary Table

Methodologies, tools, and data to measure and monitor corporate and FI alignment with the

Sector	***Recommendations***
Recommendations for FIs	Embed commitment into corporate governance and accountability measures by • Requiring board sign-off on all climate commitments and targets and including explicit oversight of these in the mandate of a specific board committee. • Integrating climate commitments into corporate and investment strategy. • Linking executive remuneration to climate-related KPIs. • Establishing a climate governance structure that prioritizes contributions to meeting global climate targets. • Establishing effective grievance mechanisms to address complaints and enforcing whistle-blower protection policies.
Recommendations for net-zero financial-sector initiatives	Hold FI members accountable and support external accountability by independent entities by • Requiring FIs to embed their commitments into internal governance and accountability as laid out above. • Adopting an accountability architecture that ensures independent review of FI efforts to meet climate commitments. • Publishing information about non-compliance and taking corrective action. • Avoiding barriers to transparency, such as entering NDAs with members. • Diversifying governing bodies. • Supporting independent periodic audits, channels for third parties to report misalignment between commitments and practice, or an independent oversight mechanism.

Part 4. Contribute to Filling Gaps in Metrics and Methodologies

1.5°C trajectory have gaps and limitations that need to be addressed in order to drive and support FI contributions to the 1.5°C trajectory. These challenges will require collaboration between many actors, including the public sector and academia, and FIs can play a critical role through knowledge sharing and engagement to support these efforts.

a. Carbon Footprinting

For over 20 years, corporates and FIs have used the GHG Corporate Reporting Protocol to calculate their 'carbon footprint.' Carbon footprinting refers to a process of accounting for the carbon (or GHG) emissions of an entity's annual activities; the process has become a key input into any form of climate risk assessment. The GHG Corporate Reporting Protocol is the most widely used GHG accounting standard, with 92% of Fortune 500 companies reporting against it in 2016.[250] The Protocol has been influential in shaping TCFD, SBTi, GFANZ, and many other initiatives.

However, while widely used, the GHG Protocol still has room to grow to provide the level of standardization and comparability necessary to provide companies and investors with actionable data. Under the reporting frameworks based on the GHG Protocol, reporting companies are not required to disclose how they calculated their emissions estimates, if they measured the data themselves, if they sought data from the other companies in their supply chains, or what type of research they did to rigorously prepare for their disclosures. In addition, the system boundaries (defining the sources of emissions to be counted) are not necessarily fixed and comprehensive, and some emission streams can be underreported. For example, the Columbia Center on Sustainable Investment's study of the steel sector revealed that following the GHG Protocol would underreport emissions as compared to other accounting frameworks for steel.[251]

The inconsistency of carbon accounting methods is acute for scopes 1 and 2, but is especially apparent for scope 3 (upstream and downstream emissions in the value chain).[252] The GHG Protocol is explicitly "not designed to support comparisons between companies based on their Scope 3 emissions,"[253] since decisions on which approaches to take and which aspects of scope 3 are financially significant are often left up to the company's discretion. This means that reported value chain emissions will vary wildly as companies determine on their own which scope 3 emissions are worth reporting without informing or consulting with investors or other stakeholders.

Importantly, the lack of a harmonized, comparable accounting framework is not an insurmountable challenge to FIs' meaningfully engaging with their portfolio companies or generally measuring effective real-economy decarbonization as a result of their efforts (for instance through the analysis of production and capital expenditure plans), but harmonization of carbon-accounting methodologies will make such accounting more rigorous, more comparable, and less gameable. The Coalition on Materials Emissions

Transparency (COMET) initiative, of which the Columbia Center on Sustainable Investment (author of this report) is a founding member, is working to develop such a harmonized framework for materials emissions.[254]

b. 1.5°C Trajectory and Science-Based Targets

Science-based targets (SBTs) emerged in recent years as a tool that aims to define corporate emission-reduction targets consistent with the science of 1.5°C achievement.[255] SBTs are designed to evaluate whether an entity's GHG emissions trajectory is 'aligned' with global climate goals. There are many different SBT methodologies, each taking a different approach to the challenging questions of scenario usage (and thus carbon budget), emissions allocations, baseline year, and scope.

In 2015, the Science-based Target initiative (SBTi) emerged to unite and rank these SBT methodologies. SBTi has also played a key role in evaluating corporate- and financial-sector climate targets. SBTi has been very influential, and its approaches and recommendations have been embedded in almost all GFANZ initiatives.

SBTi has evaluated the different methodologies and recommended two: the Sectoral Decarbonization Approach (SDA) and the Absolute Contraction Approach.[256] Many other corporate climate action frameworks use and reference the SDA approach, including the Transition Pathway Initiative.

In order to assess and validate an emissions target, all SBT methods benchmark corporate emissions against a climate-and-energy scenario that models a pathway for global or sectoral emissions. There are a variety of scenarios and scenario producers. The most prominent sectoral pathways that are aligned with 1.5°C are the IEA's Net Zero Emissions by 2050 scenario,[257] the UTS's One Earth Climate Model (OECM),[258] commissioned by the NZAOA, and the NGFS's Net Zero 2050 scenario.[259] The OECM provides the highest level of granularity within broad sectors of the economy; for instance, it includes distinct pathways for iron and steel, chemicals, cement, and aluminum. The NGFS pathway provides the least granularity, providing only one pathway for the entire industrial sector.

To a large extent, the ambition of SBTi targets (and other target-setting bodies) is constrained by which benchmark scenarios they use. Every scenario has critical decisions embedded within it that are not always made transparent (e.g., the IEA does not publish detailed regional data for its Net Zero by 2050 scenario). In addition to the careful assumptions that need to be made on uncertain technologies, perhaps the most important consideration are decisions about the remaining carbon budget, with varying degrees of probability and predictability. Overall, when aggregating all the 1.5°C-aligned pathways used by the SBTi, the world economy stays within the 500-gigaton carbon budget and reaches net-zero CO_2 by 2050, assuming at least 1–4 gigatons of CO_2 removal per year by 2050, which is in line with the 2021 IPCC estimates for a 1.5°C carbon budget with 50% probability.[260] However sectoral pathways rely on a combination of scenarios, including IPCC (2018), OECM, IEA's Net Zero Scenario, and IEA's (2017) Beyond 2°C Scenario, each relying on different assumptions about carbon budget, probability, and mitigation pathways, which are not always aligned with the 1.5°C scenario, especially for those pre-dating the IPCC's Special Report on Global Warming of 1.5°C.[261]

The academic literature suggests that the SBTi-recommended methodologies may not be the most climate aligned. The two primary academic studies on science-based target methodologies are Rekker et al. (2022)[262] and Bjørn et al. (2021).[263] They conducted evaluations of the various SBT approaches, finding that some methods excluded by SBTi may be more academically robust in terms of their ability to ensure corporate alignment with a 1.5°C carbon budget. Bjørn et al.'s study contrasts SBTi's recommended methodologies with the Centre for Sustainable Organizations'[264] context-based approach, finding the Centre's methodology may be the most aligned in terms of emissions imbalances (i.e., the difference between science-based targets and global allowable emissions). Nevertheless, SBTi recommends against that method and in favor of the methods produced by SBTi itself (SDA and Absolute Contraction Approach) without providing transparent explanations, which, for some, reflects a conflict of interest.[265]

FIs should show support to and stay abreast of all science-based multistakeholder efforts aimed at strengthening the 1.5°C-aligned scenarios—in particular, at the regional and sectoral levels. Moreover, there should be more alignment and consensus among FIs on what scenarios to use (in particular, when it comes to carbon budget and probability). This would facilitate communications with investees as well as support accountability. Cherry-picking among scenarios creates confusion that delays ambitious action.

c. Defining What Constitutes a Climate Solution and a "Green" Company

Governments have the critical and challenging role to drive private finance into appropriate parts of the economy to enable the transition.

In an effort to incentivize finance to true climate solutions and other environmentally sustainable activities and to fight against greenwashing, the EU developed a pioneering taxonomy,[266] which was published in 2020 and slowly rolled out in 2022. The taxonomy defines an environmentally sustainable activity as one that contributes to one or more environmental objectives (climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, protection of healthy ecosystems) without negatively impacting the others, and while respecting human and labor rights as established by the UN and the Organisation for Economic Co-operation and Development (OECD).

Technical screening criteria, including emissions caps, are defined to assess an activity. The criteria are meant to be reviewed every 5 years to take into account the evolution of science and technology. Companies and financial actors will have to report on the alignment of their activities with the taxonomy. The taxonomy is also impacting the design of other initiatives such as the green bond framework; the proceeds of green bonds issued in the EU can only be invested in green activities as defined in the taxonomy.[267] The EU taxonomy has incentivized 30 other countries[268] to define their own green or climate taxonomy according to its blueprint, and many seek to harmonize with the EU.[269]

However, the EU taxonomy is still facing headwinds with criticism on the confusion created by some criteria, the need for very granular data, the lack of comprehensiveness, and a lack of

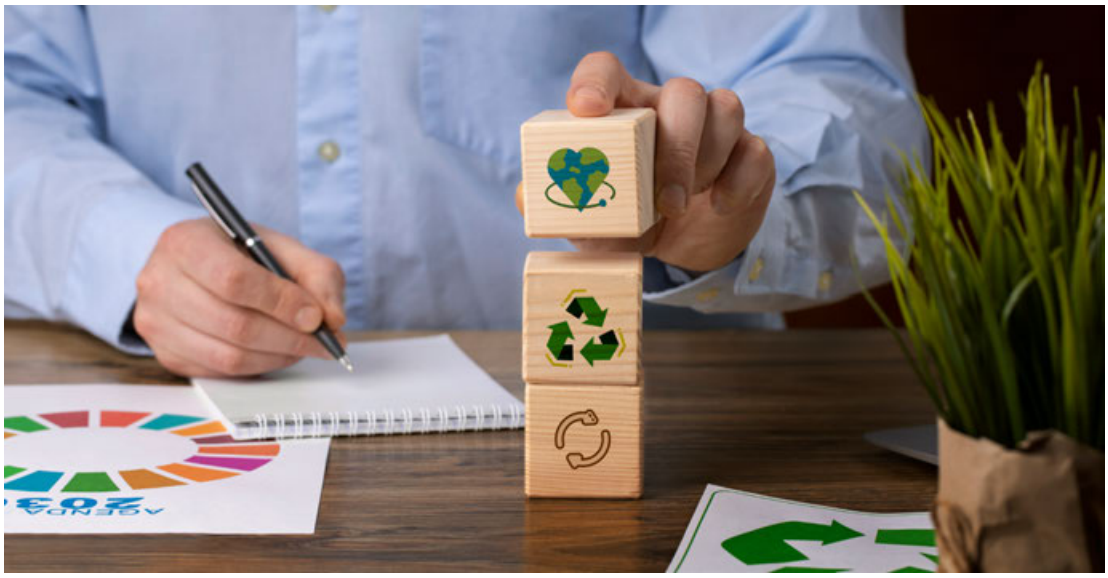
clarity, which could send the wrong signal to the investors. Companies may not be 'taxonomy-aligned' because the activity is in scope but in insufficient transition (e.g., a steel mill that is still too polluting); because the activity is not impactful enough to deserve inclusion within the scope (e.g., professional services); or because the activity is by definition harmful to the environment (e.g., a non-abated coal plant) and will never be in scope.[270] The reasons for non-alignment are not disaggregated.

Advocates and commentators have also argued that the process has been captured by corporate interests. This was the subject of open letters from hundreds of investors,[271] scientists,[272] and NGOs[273] to the EU commission, mostly denouncing the inclusion of fossil gas but also nuclear energy (a climate-safe technology that has been criticized for non-climate-related risks). As a response, a coalition of experts and NGOs has set up the "Independent Science-Based Taxonomy"[274] which reportedly replicates the robust EU taxonomy's technical criteria while removing those that they consider environmentally harmful or not science-based. Like the EU taxonomy, they intend to evolve toward a traffic-light approach in order to clear up the confusing signals currently sent by the "non-alignment" qualification (as explained above) and to update "every 3 to 5 years to reflect technological, scientific and legislative developments."[275]

The EU taxonomy is in constant development through the work of its technical expert group, the promulgation of "delegated acts" or implementing regulations, and regular consultations with various economic actors.[276]

While insufficient and imperfect, the taxonomy is a laudable regulatory effort to give direction to investors and companies on how to reorient finance and efforts toward environmentally sustainable solutions.

Given the remaining work ahead in defining environmentally sustainable activities and in operationalizing reporting against the definition, all stakeholders, including FIs, need to be supportive and share relevant knowledge and expertise—in particular, in countries engaged in defining taxonomies, so long as FI support for government efforts does not lead to FIs holding the pen.



Conclusion

This report has underscored the deep insufficiencies of bottom-up approaches to financing the energy transition as well as highlighted the main inconsistencies, gaps, and shortcomings of current approaches to net zero.

The following are the key points that emerge from this report:

1. A coherent technological pathway and associated policy framework is urgently needed to guide the financial sector toward national, regional, and global climate and energy transition goals. There are deep and inherent limitations to bottom-up approaches to achieving decarbonization, some that are within the capability of financial institutions to address but many that are beyond their remit. The financial sector should be guided by an official pathway and associated policy tools, including carbon pricing, public finance and guarantees, strategic subsidies, sectoral regulations, and so on.
2. In the absence of a coherent official pathway, the proliferation of commitments, alliances, frameworks and tools have intentionally or unintentionally overstated the effectiveness of their approaches with respect to climate action. FIs should communicate clearly and accurately about climate-related pledges and commitments, including whether the goal is to contribute to climate action or to mitigate risk; how business strategies will be aligned to achieve those goals; and perceived limitations or conflicts that may undermine climate-related pledges. FIs should ensure that targets, metrics, and methodologies are aligned with goals and business strategies, and do not misrepresent the effectiveness of FIs' strategies.
3. Government policy, plans, roadmaps, and regulation are decisive for achieving global climate goals. Governments drive innovation, shift markets, assign costs and liabilities, incentivize important investments and behaviors, and define fiduciary responsibilities, among other things. Government policies are the most important determinant of corporate performance on sustainability issues, and public policies apply to all types of actors, both publicly traded and privately owned. The fundamental way that FIs can accelerate the energy transition—as well as mitigate their exposure to climate risk, create clearer pathways for private finance in climate-related opportunities, and reconcile potential conflicts between fiduciary duty and climate action—is for them to stop lobbying against government regulation and governance, require that their financed entities similarly stop anti-climate lobbying, and ensure that any other political engagement, including of financed entities or of other associations, is supportive of robust climate action.
4. The most decisive and important role for the financial sector in accelerating the energy transition is its ability to mobilize the trillions of dollars needed to achieve climate goals, closing the growing gap in climate finance. The emphasis for the financial sector, therefore, should be on how *new finance* is being directed and whether new investments, loans, underwriting, and other forms of financing are contributing to—and not undermining—a rapid and just transition. Current financial flows toward low-carbon solutions must be multiplied by a factor of four to six.

5. The main opportunity FIs have to accelerate the energy transition with respect to existing portfolios is for FIs to use their influence with financed entities to support their transitions in line with a 1.5°C trajectory, including ensuring that their financed companies are not lobbying against government regulation.

6. Few FIs or their alliances have meaningful accountability for failing to meet even their own targets or for misrepresenting their strategies and effectiveness. There is little consequence for FIs that do not adhere to the commitments of the alliances of which they are members or do not align their business plans with their stated strategies. Accordingly, there is little incentive for honest communication or for the hard work of changing business plans and models. Especially as the regulatory framework is nascent, FIs and their alliances and initiatives should develop more robust mechanisms for accountability and oversight.

7. Finally, climate action calls for urgent and transformative change in a complex and rapidly evolving environment, in which the answers, appropriate technologies, and tools are not all readily available. The transformation requires analysis of regional, national, and sectoral pathways, and for the coordination of public and private actors and other stakeholders. The report recognizes the key challenges confronting FIs in meeting the report's recommendations, particularly related to uncertain pathways, nascent and uncertain technologies, and insufficiently robust metrics and accounting methods.

In the near term, we hope this report provokes engaged discussion among financial institutions, their alliances, the frameworks that purport to guide or assess FIs' climate actions, and other stakeholders that are engaged in FI's net zero approaches. However more importantly, we hope that this report supports the development of a robust policy framework that is necessary to align financial flows – and financial institutions – with global climate goals.

Annex A: Table of Relevant Initiatives

In the preparation of this report, we have reviewed the commitments and guidance documents for each of the leading commitment-based initiatives for financial institutions (FIs), as well as the initiatives and tools these guidelines draw upon.[277] Each of these frameworks speaks to a different element of the target-setting process.

Type	*Name*	*Description*
Private sector sustainability initiatives • Broad focus on sustainability • Not specific to financial sector • Involve commitment	United Nations (UN) Global Compact	A voluntary corporate sustainability initiative. Companies commit to aligning with a set of principles around human rights, labor, environment, and anti-corruption.
Umbrella private sector net-zero initiatives • Focus on net-zero emissions • Not specific to financial sector • Involve commitment • Encompass other initiatives	Race to Zero Campaign	A UN-backed alliance of businesses, cities, regions, investors, and climate coalitions committed to achieving net-zero emissions by 2050. Companies and municipalities can join the Race to Zero by being part of its partner coalitions, such as the Climate Pledge, the Net-Zero Asset Managers Initiative, and the Cities Race to Zero.
Private sector climate initiatives • Focus on climate • Not specific to financial sector • Involve commitment	The Climate Pledge	Co-founded by Amazon and the organization Global Optimism. Companies that join the Climate Pledge commit to net-zero emissions by 2040 through regular reporting, carbon elimination, and credible offsetting.
	First Movers' Coalition	A buyers' club of companies committing to make green purchase agreements in hard-to-abate sectors such as aluminum, aviation, chemicals, concrete, shipping, steel, and trucking.
Umbrella financial sector environmental initiatives • Focus on environment • Financial sector specific • Encompass other initiatives	UN Environment Programme Finance Initiative (UNEP FI)	A UN-convened network of banks, insurers, and investors committed to the implementation of sustainable practices in the financial sector. The UNEP FI was involved in the development of the Principles for Responsible Investment and is responsible for establishing the Principles for Responsible Banking and the Principles for Sustainable Insurance. It encompasses three of the net-zero financial-sector initiatives (the NZAOA, NZIA, and NZBA). It was also partner to the development of the Task Force on Nature-Related Financial Disclosures.
Financial-sector ESG initiatives • Broad focus on ESG • Financial sector specific • Involve commitment	Principles for Responsible Investment (PRI)	A UN-backed investor initiative that promotes responsible and ESG investment. Its signatories, which include asset owners, investment managers, and service providers, commit to six principles around ESG implementation and disclosure and are required to publicly report on their responsible investment activities.
	Principles for Responsible Banking (PRB)	UNEP FI's framework for sustainable banking. Its signatories commit to six principles for bank strategy, investment, and lending practices, including alignment with the Paris Climate Agreement and environmental target setting.
	Principles for Sustainable Insurance	UNEP FI's framework for ESG integration for insurance companies. Its signatories commit to four principles around ESG incorporation, disclosure, and promotion.

Type	*Name*	*Description*
Umbrella net-zero financial-sector initiatives • Focus on net zero emissions • Financial sector specific • Involve commitment • Encompass other initiatives	Glasgow Financial Alliance for Net Zero (GFANZ)	A coalition of FIs committed to the transition to a net-zero carbon-emissions economy. Asset managers, banks, insurers, and other financial-sector companies can join GFANZ by signing on to any of its member alliances—the NZAM, PAAO, NZAOA, NZIA, NZBA, Net-Zero Financial Service Providers Alliance, and Net-Zero Investment Consultants Initiative.
Net-zero financial-sector initiatives • Focus on net zero emissions • Financial sector specific • Involve commitment	Net-Zero Banking Alliance (NZBA)	One of GFANZ's industry-specific member alliances, targeted at banks. Its signatories commit to aligning their lending and investment practices to a target of net-zero emissions by 2050.
	Net-Zero Insurance Alliance (NZIA)	One of GFANZ's industry-specific member alliances, targeted at insurers. Its signatories commit to aligning their insurance and reinsurance underwriting portfolios to net-zero by 2050.
	Net-Zero Asset Owner Alliance (NZAOA)	One of GFANZ's industry-specific decarbonization alliances, targeted at institutional investors. Its signatories commit to aligning their investment portfolios to net-zero by 2050.
	Net-Zero Asset Managers Initiative (NZAMI)	One of GFANZ's industry-specific member alliances, targeted at asset managers. Its signatories commit to supporting the transition to net-zero emissions by aligning assets under management to net-zero by 2050, setting interim decarbonization targets, disclosing certain climate metrics, and engaging key stakeholders on climate issues.
	Net-Zero Financial Service Providers Alliance	One of GFANZ's industry-specific member alliances, targeted at financial services providers. Its signatories commit to aligning their practices with net-zero emissions by 2050 by setting decarbonization targets.
	Net-Zero Investment Consultants Initiative	One of GFANZ's industry-specific member alliances, targeted at investment consultants. Its signatories commit to aligning their operations and advisory services to net-zero carbon emissions by 2050.
	Paris Aligned Asset Owners initiative (PAAO)	One of GFANZ's industry-specific member alliances, targeted at asset owners. The PAAO is overseen by the Paris Aligned Investment Initiative. Its signatories commit to transitioning their investments to achieve net-zero portfolio greenhouse gas (GHG) emissions by 2050.
	Paris Aligned Investment Initiative (PAII)	A forum of investors from four regional groups (IIGCC, Ceres, IGCC, and AIGCC). Oversees the PAAO, a GFANZ alliance. The PAII developed the Net Zero Investment Framework, which provides guidance for investors to align their portfolios with net-zero through reduced emissions and investment in climate solutions. It has also developed commitments for asset managers and asset owners.
Investor partnerships/ coalitions • Focus on net zero emissions	The Investor Agenda	A collaboration between several groups and initiatives including the CDP, PRI, UNEP FI, and the four regional investor coalitions (Ceres, IGCC, IIGCC, and AIGCC). Develops guidance for investors on corporate engagement, managing climate-related investment risk, policy advocacy, and climate-related disclosure and publishes expectations for Investor Climate Action Plans.

Type	*Name*	*Description*
Regional investor partnerships/ coalitions • Regional focus • Financial sector specific	Ceres	A coalition of North American institutional investors focused on sustainability and decarbonization. Ceres has investor, company, and policy networks and provides research and roadmaps for sustainable action.
	Investor Group on Climate Change (IGCC)	A coalition of Australian and New Zealand institutional investors focused on the issue of climate change. IGCC members participate in working groups and contribute to research and reports on sustainability topics.
	Institutional Investors Group on Climate Change (IIGCC)	A coalition of European institutional investors focused on the issue of climate change. The IIGCC has corporate and policy programs that encourage members to engage with companies and policy-makers on climate issues. It also publishes research and reports.
	Asia Investor Group on Climate Change (AIGCC)	A coalition of Asian institutional investors dedicated to the issue of climate change and low-carbon investing. The AIGCC focuses its research on the Asia-Pacific region.
Disclosure and reporting frameworks/initiatives • Provide guidance for climate/ sustainability disclosure	Partnership for Carbon Accounting Financials (PCAF)	A group of FIs cooperating on the development and implementation of an accounting system for emissions associated with loans and investments. PCAF develops and maintains the Global GHG Accounting and Reporting Standard for the Financial Industry.
	Carbon Disclosure Project (CDP)	A non-profit organization that runs a voluntary disclosure system for investors, companies, and municipalities to report their environmental impacts. The CDP maintains several disclosure templates, or questionnaires, and rates parties based on their responses. These ratings are then made available to the public.
	Task Force on Climate-Related Financial Disclosures (TCFD)	A group of 31 corporate and financial industry experts chaired by Michael Bloomberg. The TCFD develops and publishes recommendations for what information companies should disclose regarding climate-related risks and opportunities.
	Task Force on Nature-Related Financial Disclosures	A group of 40 corporate and financial industry experts. The Task Force on Nature-Related Financial Disclosures develops and publishes recommendations for what information companies should disclose regarding how nature affects their businesses and vice versa.
	Sustainability Accounting Standards Board (SASB)	Part of the non-profit International Financial Reporting Standards Foundation, which works to develop and maintain quality accounting standards. The SASB Standards identify sustainability issues that are financially material to different industries. Companies can use the SASB "materiality framework" to guide their sustainability reporting.
	International Sustainability Standards Board	A body established by the International Financial Reporting Standards Foundation to develop a standard framework for sustainability-related disclosure. The International Sustainability Standards Board has committed to building upon the SASB Standards in developing this framework.
	GHG Protocol	Supplies the most commonly used standards for carbon accounting, or measuring and disclosing GHG emissions. According to the organization, nine out of 10 Fortune 500 companies report emissions in line with GHG Protocol guidance.
	Global Reporting Initiative	Governed by the Global Sustainability Standards Board. The Global Reporting Initiative develops and maintains a set of standards for sustainability reporting.
	European Financial Reporting Advisory Group (EFRAG)	A private association charged with the development of draft European Union (EU) Sustainability Reporting Standards. EFRAG is funded both by the EU and private member organizations.

Type	*Name*	*Description*
Climate and sustainable finance regulations • Enforced by regulatory bodies • Focused on climate/ sustainability disclosure	United States' Securities and Exchange Commission (SEC)-proposed climate rules	Still in the proposal stage. The "issuer rule" would require reporting companies to disclose information about emissions, climate targets, and climate-related risks and risk management. The "investor rule" would require ESG funds to disclose certain details about their environmental and social governance (ESG) strategies in documents such as prospectuses and annual reports. These rules are at the top of the SEC's agenda for 2023.
	EU Sustainable Finance Disclosure Regulation	This EU regulation mandates the disclosure of certain ESG metrics by FIs at both the entity and product levels. Among other requirements of the Sustainable Finance Disclosure Regulation, investment products must be categorized as either Article 6, Article 8, or Article 9—designations that reflect the amount of consideration for ESG factors in the investment process and determine what metrics must be disclosed by the fund managers.
	EU Non-Financial Reporting Directive (NFRD) and Corporate Sustainability Reporting Directive	Under the NFRD, large companies must report on sustainability topics including environment, treatment of employees, diversity, anti-corruption and bribery, and human rights. The Corporate Sustainability Reporting Directive, which entered into force in January 2023, amends the NFRD to encompass a broader set of companies (including listed small and medium-sized enterprises) and strengthen requirements for environmental and social disclosure.
	EU taxonomy	The EU taxonomy lays out a catalog of economic activities that contribute to climate goals, as well as technical screening criteria for determining when/how certain economic activities qualify as sustainable. It is sometimes considered the "lexicon" for other EU climate regulations, which reference this catalog.
	UK Climate-related Financial Disclosure regulations	These UK regulations, enacted in 2022, require large companies and certain limited liability partnerships to disclose on climate-related risks and opportunities according to the recommendations of the TCFD.
	UK Sustainability Disclosure Rules	Currently under consultation. These rules would set requirements for fund- and manager-level disclosures on the sustainability of investment products. They would include a fund-labeling regime and guidance for preventing "greenwashing."
Engagement partnerships/ coalitions • Focus on investor stewardship and engagement	Climate Action 100+ (CA100+)	An initiative focused on investor stewardship and engagement with corporations on the issue of climate change. CA100+ is coordinated by PRI and the four regional investor coalitions. It publishes a "Net Zero Company Benchmark" that evaluates corporations for alignment with net-zero goals using data on company reporting, emissions, and internal policies.
Decarbonization pathway guidance/evaluation • Develops frameworks for and evaluate company decarbonization pathways	Science Based Targets Initiative (SBTi)	A partnership between the CDP, UN Global Compact, World Wildlife Fund, and World Resources Institute that provides general and sector-specific guidance for companies setting net-zero and emission-reduction targets. Companies can commit to setting "science-based targets," or SBTs, that are validated by the SBTi as aligning with their guidance criteria.
	Transition Pathway Initiative	A research initiative that provides data and analysis of companies' climate strategies and impacts. The Transition Pathway Initiative publishes assessments of companies' "Carbon Performance," or alignment of their emissions and emission-reduction targets with the Paris Agreement benchmarks of 1.5°C and 2°C.
Policy/lobby watch • Provides transparency on corporate lobbying and policy engagement	InfluenceMap	An independent research provider that maintains a database of global climate policy lobbying by corporations and industry associations. InfluenceMap gives companies scores that reflect their lobbying efforts and climate policy engagement.
	OpenSecrets	A non-profit organization that tracks American political donations and lobbying efforts.

Annex B: Effective and Accurate Target Setting

As described in Section 1.d, the careful use of fit-for-purpose and accurate targets, methodologies, and metrics is critical. Inappropriate targets, methodologies, or metrics can be manipulated or can misrepresent the goals and effectiveness of specific pledges, initiatives, or alliances. Below, we elaborate on the risks and loopholes with targets and metrics. Because corporate target setting and reporting are integral inputs to financial institutions' decision making and strategies, we include examples of corporate metrics and targets, both to underscore the analysis required of FIs and to identify where FIs can support the development and use of more robust measurement and policies around target setting and reporting.

i. Restricting the Use of GHG Offsets

Corporate- and financial-sector targets that rely on carbon offsets other than carbon removals distort and misrepresent climate exposure, alignment, and impact. Removal offsets also should only be used to compensate for residual emissions for which no feasible reduction opportunity exists.

Current practice is far off this mark. The use of carbon offsets has gained traction in recent years; the voluntary (unregulated) market for offsets is experiencing exponential growth and is projected to reach about USD 700 million in 2027, with an 11.7% compounded annual growth rate between 2022 and 2027.[278] Offsetting, by definition, is not "about trapping past emissions but about enabling current and future emissions to continue,"[279] and the use of offsets has distracted from true emission-abatement strategies, especially since many offsets are available at low cost.

The most dubious and discredited form of offsets is avoided emissions offsets, which involve calculating non-emitted carbon against a counterfactual baseline; for instance, some offsets compare emissions in a typical coal or heavy oil-based power plant against those in a gas conversion or renewable energy project, and consider the difference to be an 'offset.'[280] Some corporates then use these types of 'offsets' to negate emissions on a balance sheet without in fact removing any carbon from the atmosphere. They are also particularly dubious with respect to additionality; many of these projects would have taken place even without the sale or purchase of credits tied to these 'avoided emissions.' Two leading verification bodies—Verra and Gold Standard—have excluded grid-connected renewable projects outside of the poorest countries from the list of offsets they certify given the absence of additionality for these projects.[281] Despite this, many companies, including FIs, still heavily rely on renewable energy offsets.[282] In fact, a Bloomberg investigation found that three quarters of the 2 million offsets French courier and banking group La Banque Postale SA bought in 2021 came from renewable projects.[283]

Another class of 'avoidance offsets' are those that supposedly provide finance to avoid deforestation or other land-degrading practices that would release stored carbon.[284]

In addition to credibility issues related to establishing a baseline, forecasts, and the question of additionality, these 'avoidance offsets' further raise an issue of the 'permanence' of the avoidance commitments and strategies. A 2023 investigation revealed that "more than 90% of rainforest carbon offsets [REDD+] by [the] biggest certifier [Verra] are worthless."[285]

The Science Based Targets Initiative (SBTi) forbids the accounting of avoided emissions in targets and emission reduction,[286] and the Oxford Principles for Net Zero Aligned Carbon Offsetting propose that avoided emissions offsets should be rapidly phased down.[287]

A second set of dubious offsets are carbon capture and storage (CCS) technologies that capture emissions at point source and store it underground, which lack credibility largely because of their current financing and application. Most CCS projects that have been done to date (81%)[288] have been used for enhanced oil recovery (EOR) (inducing increased fossil fuel extraction) since this is currently one of the few ways to make CCS economically viable.[289] Given that in the case of EOR, the CO_2 is both marketed and released to the atmosphere eventually, CCS for EOR has not led to offset crediting, and non-EOR uses of CCS are too expensive for offset crediting.[290] The offset market could help boost effective CCS technologies (that truly sequester the carbon) but these are still in development and remain expensive, so reliance on CCS as an offset should be restrained for hard-to-abate sectors (rather than the use of CCS for EOR), and ultimately should follow high-integrity principles.[291]

The final form of offsets is emissions-removal offsets, of which there are broadly two types: technological offsets, such as Bio-Energy with Carbon Capture and Storage and Direct Air Carbon Capture and Storage (DAC), and ecosystem-based offsets or "nature-based solutions" (NbS). In 2021–2022, removal offsets only made up 3% of the voluntary offset market, according to the four largest voluntary-offset project registries, and none of them was associated with long-term storage, which is the only form that can effectively cancel an emission source elsewhere.[292] In order to be credible, other criteria related to removal offsets should be considered. For instance, DAC can be highly energy intensive; they should be powered by renewable energy sources to avoid greater emissions from the power they require.[293] Similarly, BECSS should only be based on sustainable biomass.[294] Whether these technologies benefit from carbon credits or not, both the Intergovernmental Panel on Climate Change and the International Energy Agency[295] warn against benchmarking against pathways that rely heavily on them, especially in the near term, given that they are unproven at scale.[296] However, investment in true removal approaches is also necessary, as discussed below, so further investments in these technologies are warranted – just not as offsets.

NbS offsets typically aim to protect or restore ecosystems that act as natural carbon sinks; however, NbS projects are difficult to measure and monitor, and may be damaged or destroyed by extreme weather events such as wildfires, leading to concerns about their permanence and higher risks of carbon overshoots. Moreover, NbS projects have faced systematic accusations of land-tenure disputes and dispossession from Indigenous Peoples and forest communities, and high levels of violence.[297] Where demand for NbS-land use competes with farmland, this may escalate risks around food security.[298] A 2021 report by Oxfam calculated that the total amount of land required to fulfil planned carbon removal via NbS would be equivalent to five times the landmass of India, or all of the farmland on the planet.[299] Communities in the Global South have expressed concerns about "unequally

distributed [financial] benefits from offset projects, neocolonial approaches to property rights, and the sense that the North will continue to consume [greenhouse gases/GHGs]."[300]

Despite these limitations, offsets have played an increasingly significant role in corporate climate pledges. For instance, most oil majors continue to plan for business-as-usual fossil fuel expansion, while planning to meet their net-zero commitments through large and often unrealistic levels of offsets in their capital expenditure disclosures. This dynamic has been termed "predatory delay,"[301] as advocates argue that it distracts from the real action needed in the near term to achieve decarbonization.[302]

Offsets should only be used for non-abatable, residual emissions, and in those cases, offsets should be high-integrity, rights-respecting, removal-based offsets.

Some initiatives are putting increased restrictions on offsets, in recognition of the technical and social challenges. The SBTi and the CA100+ benchmarks, for instance, introduce substantial restrictions on the use of offsets. The SBTi states that offsets should only be used for "residual" emissions, which cannot be more than 5%–10% of total emissions.[303] The CA100+ states that offsets should not be used in sectors with technological alternatives, such as the power sector.[304] The Net-Zero Insurance Alliance[305] and the Net-Zero Asset Owner Alliance (NZAOA) (in its Target Setting Protocol 3.0)[306] also exclude the use of offsets in their members' interim targets, and the NZAOA's pathways rely only on nature-based removals to avoid relying on unreliable technological solutions.[307] Other initiatives have less clear restrictions; for instance, the Net-Zero Banking Alliance calls for "applying evolving leading practice."[308]

While investments in carbon credits should not be used to offset corporate emissions (other than non-abatable, residual emissions), investments in carbon credits for removals or emission reductions (whether nature-based or through emerging technologies) are still necessary, in light of the current climate trajectory.[309] These investments are increasingly referred to as "beyond value chain" removals. Indeed, the United Nations High-Level Expert Group on Net Zero Emissions Commitments of Non-State Entities recommends that "high integrity carbon credits in voluntary markets should be used for *beyond value chain* mitigation but *cannot be counted toward a non-state actor's interim emissions* reductions required by its net zero pathway"[310] (emphasis added). Similarly, the NZAOA protocol clearly states that "members are highly encouraged to contribute to a liquid and well-regulated carbon removal certificate market before 2030 as such a market is important for accelerating decarbonisation," and "to invest in projects and technologies of durable CO_2 avoidance and removal to scale future markets rapidly."[311] The NZAOA explains that these investments cannot count toward decarbonization targets but toward separate "financing transition targets."[312] Some groups and researchers are exploring an alternative path that would allow corporates to reap reputational benefits for "beyond value chain" investments in removals.[313] These investments should start immediately, and FIs should increase their investment in this area and encourage clients and portfolio companies to do the same according to high-integrity principles such as those laid out in the Tropical Forest Credit Integrity (TFCI) Guide.[314]

ii. Using Absolute Emission-Reduction Targets

Corporate carbon-emissions calculations are usually normalized, or made comparable and interpretable across scales, by converting them into metrics for emissions "intensity." Emissions-intensity metrics are a relative measure: they convert absolute emissions into emissions per unit of a specific activity, making it easier to compare companies of different sizes. Targets and strategies based on emissions intensity are even more poorly correlated with actual GHG emissions than those based on absolute emissions.[315] With per-activity emissions reductions, emissions intensity can fall, even as real (absolute) emissions continue to rise. Oil Change International has demonstrated this by modelling Shell's 2017 climate target of a 50% reduction in emissions intensity from 2015 levels by 2050; on a typical 3.5% per annum growth trajectory, this would reflect a ~10% rise in absolute emissions.[316] Emissions-intensity metrics can also be muddied by corporate diversification: as investment in renewable energy rises as a proportion of total activity, the emissions intensity of a single corporation or of a portfolio or FI may decrease even as companies are increasing overall fossil fuel production and absolute emissions.

Emissions-intensity metrics undermine incentives to decrease or phase out fossil fuel production since diversification gives the appearance of reduced emissions. But additional low-carbon capacity never compensates for the emissions of remaining high-carbon activities. Decarbonizing the real economy requires replacing high-carbon energies with low-carbon solutions. Absolute emissions reductions, not just intensity reductions, are necessary to stay in the scope of the Paris Agreement.

The GFANZ target-setting protocols suggest the use of absolute-emissions metrics but leave the absolute or intensity format of targets open for each organization to choose.[317] The Paris Aligned Investment Initiative[318] and NZAOA[319] give a choice of target format but call for members to report on both absolute- and intensity-based metrics. The Net Zero Asset Managers initiative,[320] Net-Zero Banking Alliance,[321] and SBTi framework for FIs[322] are less prescriptive, leaving the choice open to users. The Net-Zero Investment Consultants Initiative[323] and Net-Zero Financial Service Providers Alliance[324] do not specify, with only very high-level criteria for target setting currently. This flexibility leads to a substantial risk that the carbon budget "may be substantially overshot if companies systematically choose the … method that gives them the least challenging target."[325]

This should change, to ensure absolute-emissions targets are given primacy over intensity targets (restricting intensity targets for comparison purposes or as a measure of increased efficiency alongside the reduction in absolute emissions). In June 2022, Race to Zero moved to invert the traditional prioritization of intensity metrics in its Interpretation Guide, so that absolute-emissions-reduction targets are now required and intensity-based metrics are considered appropriate additions in specific cases.[326] For instance, for the power sector, intensity targets might make sense given the need to electrify the economy to replace the direct use of fossil fuels; expanding electrification means that absolute emissions will first increase until they decrease with the intensified penetration of renewables.

When FIs use intensity targets for their portfolio metrics, the above problems are compounded by the fact that FIs use different metrics for intensity targets (for example,

emissions intensity can be expressed by tons of emitted carbon dioxide per million units of currency invested or per unit of economic activity, and the measurement can apply to an entire portfolio or to only some of the FI's activities),[327] further undermining the usefulness of intensity metrics as a tool for comparison.

iii. Using Near-Term in Addition to Long-Term Targets

Emission-reduction targets are often on a 2050 timeline. Short- and medium-term targets are critical for meeting those 2050 targets. Race to Zero has recognized the importance of near-term action to reduce GHG emissions, stating that transition plans must describe actions to be taken over immediate (1-year), short (2–3-year), and medium (by 2030) timeframes.[328]

All of the GFANZ initiatives[329] require a 2050 target, and while most also require a 2030 target, only the NZAOA requires a 2025 target.

The World Benchmarking Alliance's November 2022 benchmark of 400 of the world's most influential financial institutions found that only 37% have disclosed long-term net-zero targets, and "disappointingly, of these commitments only 2% have been translated into interim targets [e.g., 2025 and 2030] applied across the institution's financing activities."[330]

Long-term targets do not adequately account for the near-term constraints of the finite carbon budget, the possibility of overshooting and triggering feedback loops, or the path dependency resulting from Committed Cumulative Carbon Emissions or 'carbon lock-in.'[331] Without intermediate targets, it is also more difficult to assess the progress made and trigger contingency mechanisms in case emission reductions are lagging.

Emission-reduction targets should align with the recommendations of the Intergovernmental Panel on Climate Change: "Global greenhouse gas emissions [have] to peak before 2025 at the latest, and be reduced by 43% [from 2019 levels] by 2030."[332] Additional sectoral targets should be defined to provide a more granular view of the emission trajectories that should be targeted by each sector in addition to those already developed by the International Energy Agency, Sydney University of Technology, and the Network for Greening the Financial System (see Part 4).

iv. Choosing Appropriate Base Years for GHG Calculations

Standards for emission-reduction targets for companies and FIs should require rigorously chosen base years and base-year calculations, rather than strategically chosen ones that can distort targets and the true extent of progress. A 2021 Columbia Center on Sustainable Investment analysis revealed that companies use a wide range of base years.[333]

Companies setting targets can manipulate base years by (1) choosing a base year with unusually high emissions[334] and (2) choosing a base year that is so far past that calculations account for emissions reductions that took place earlier.[335] Both of these practices lead to an overstatement of emissions reductions.

SBTi recommends companies "choose the most recent year for which [verifiable data on scopes 1, 2, and 3 emissions] are available as the base year" and that this year should be

"representative of a company's typical GHG profile" and support sufficiently forward-looking ambition.[336] When a "representative" year for emissions is not available, SBTi suggests taking an average of carbon emissions across several years as a baseline.[337] Additionally, updated SBTi Criteria and Recommendations (Version 5.0, October 2021) state that the "choice of base year must be no earlier than 2015."[338] However, SBTi does not report on whether and how company targets meet these criteria (see further discussion in Section 4b).

v. Separating Methane (and Other Potent GHG) Emissions from CO_2 Emissions

The metric of 'CO_2 equivalent' is the most comprehensive metric and the most widely used. It converts all GHGs (carbon dioxide [CO_2]), methane (CH_4), nitrous oxide (N_2O), fluorinated gases (mostly perfluorocarbons [PFCs], hydrofluorocarbons [HFCs], and sulfur hexafluoride [SF6]) into a CO_2 equivalent using the global warming potential of each GHG.

While useful to succinctly communicate on emission-reduction pathways and compare them across companies or sectors, the CO_2 equivalent metric masks and conflates progress on meeting varying targets related to the specific emitted gasses. In addition, the metric can look different depending on the time period being used to calculate the global warming potential. For instance, "over 20 years, [a ton of] methane would trap about 80 times as much heat as [a ton of] CO_2 [whereas] over 100 years, that original ton of methane would trap about 25 times as much heat as the ton of CO_2."[339]

Depending on the industry, separate reporting and targets might be needed for each GHG type: for instance, the agriculture sector emits more N_2O and CH_4 than CO_2 (not accounting for forestry/land use changes) while the transportation sector emits more CO_2 than CH_4 and N_2O.[340]

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