

# Case Studies on Transition Finance and Decarbonization Contribution Methodologies

SEPTEMBER 2024



**GFANZ**

Glasgow Financial Alliance for Net Zero

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## Important notice

*This case study publication was developed by the Glasgow Financial Alliance for Net Zero (**GFANZ**) with contributions from GFANZ sector-specific alliance member financial institutions. This publication features case studies and industry examples that demonstrate or support the implementation of the voluntary technical considerations set out in the GFANZ Secretariat Technical Review Note: Scaling Transition Finance and Real-economy Decarbonization (December 2023). For the avoidance of doubt, nothing express or implied in this publication is intended to prescribe a specific course of action. This publication does not create legal relations or legally enforceable obligations of any kind. Each GFANZ sector-specific alliance participant unilaterally determines whether, and the extent to which, it adopts any of the potential courses of action described in this publication.*

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## Acknowledgments

This case study publication was produced by the Glasgow Financial Alliance for Net Zero (GFANZ) with contributions from member financial institutions of the sector-specific alliances comprising GFANZ. This publication aims to provide context and examples of how financial institutions are scaling finance and engagement across the GFANZ four key transition financing strategies set out in the *Technical Review Note: Scaling Transition Finance and Real-economy Decarbonization* (December 2023).<sup>1</sup>

The case studies and examples have been drafted by relevant financial institutions, other organizations, and industry bodies (in accordance with their own policies and procedures for making details regarding their net-zero strategies and/or their clients and portfolio companies public) and their inclusion herein does not imply that every case study and/or example is endorsed by every party, sector-specific alliance, or sector-specific alliance participating firm, including the firms represented on the Principals Group, nor does it imply that the content of these case studies and examples reflects the views or position of GFANZ or the GFANZ Secretariat.

The GFANZ Secretariat would like to acknowledge and express our gratitude to the numerous sector-specific alliance members who voluntarily submitted case studies. We also extend our thanks to the organizations and initiatives featured within this publication for providing examples and for their ongoing contributions to advancing the field of Transition Finance and development of supporting metrics and tools. The case studies and examples were edited by the GFANZ Secretariat. Oliver Wyman provided knowledge and advisory support.

## About GFANZ

The Glasgow Financial Alliance for Net Zero (GFANZ) is a global coalition of financial sector net-zero alliances working together to support the world's transition to net-zero emissions by 2050. Through the net-zero alliances, GFANZ has united over 675 institutions across the financial sector, including banks, asset owners, asset managers, financial service providers, and investment consultants, spanning 50 jurisdictions and representing 40% of global private financial assets. To help unlock transition investment in developing economies, GFANZ regional networks work to support capital mobilization, expand participation, and reflect the diverse needs of financial institutions around the world.

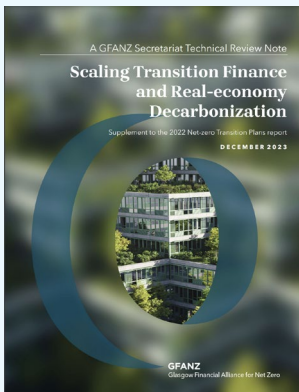
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<sup>1</sup> GFANZ Secretariat, [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023.

## GFANZ publications and resources

The GFANZ voluntary recommendations, guidance, and tools aim to support financial institutions in developing and implementing credible, high-ambition strategies for achieving net zero.

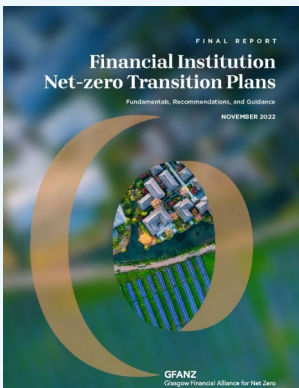
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### Scaling Transition Finance and Real-economy Decarbonization

This GFANZ Secretariat Technical Review Note further develops the Transition Finance strategies by providing a supplement to the 2022 GFANZ NZTP guidance and discusses potential decarbonization contribution methodologies as a complement to today’s metrics.

[Download the report](#)



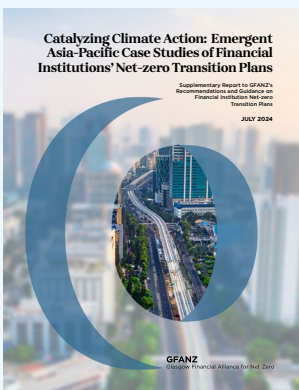
### Recommendations and Guidance on Financial Institution Net-zero Transition Plans

This publication describes how financial institutions across the financial system can operationalize their net-zero commitments and support the real-economy transition.

[Download the executive summary](#)

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### Catalyzing Climate Action: Emergent Asia-Pacific Case Studies of Financial Institutions' Net-zero Transition Plans

This report builds on the [2023 inaugural case study report](#) that featured components of Asia-Pacific financial institutions’ net-zero transition plans, this iteration features end-to-end transition plans and the evolution of practices across the region.

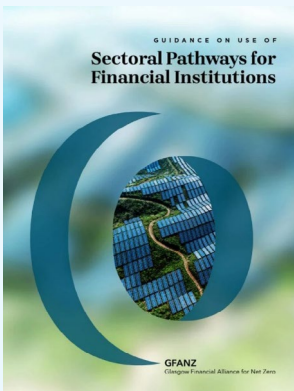
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### **Asia-Pacific Case Studies on Components of Financial Institution Net-zero Transition Plans**

This supplementary report to “Recommendations and Guidance on Financial Institution Net-zero Transition Plans,” collates 12 case studies from GFANZ APAC participants and features components of transition plans.

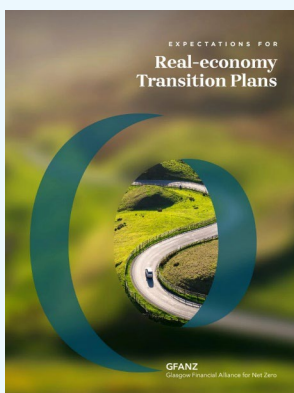
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### **Guidance on the Use of Sectoral Pathways for Financial Institutions**

This publication offers guidance and a framework to help financial institutions evaluate suitability of sectoral pathways in their transition planning process and implementation efforts.

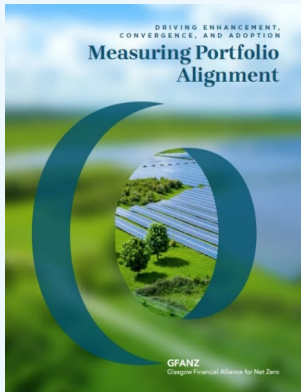
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### **Expectations for Real-economy Transition Plans**

This report distills existing guidance to bring clarity and help companies in the real economy develop credible transition plans. Additionally, the report brings much-needed consistency on metrics and data points required by financial institutions to evaluate the progress and credibility of companies' net-zero transition plans.

[Download the report](#)



**Measuring Portfolio Alignment:  
Enhancement, Convergence, and Adoption**

This publication provides a practitioner perspective for measuring the alignment of investment, lending, and underwriting activities with the goals of the Paris Agreement and critical 2050 global net-zero objectives.

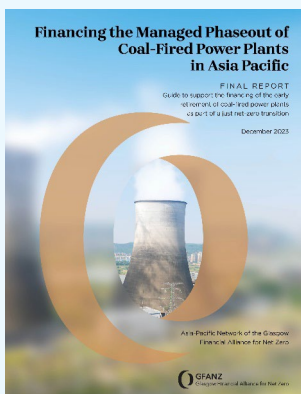
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**Managed Phaseout of High-emitting Assets**

This publication provides a preliminary and high-level approach to support the identification of — and guidance regarding — assets where Managed Phaseout could be appropriate.

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**Financing the Managed Phaseout of Coal-Fired Power Plants in Asia Pacific**

This publication addresses financing the Managed Phaseout of coal-fired power plants in the Asia-Pacific region and aims to provide practical guidance for net zero-committed financial institutions considering financing of coal phaseout.

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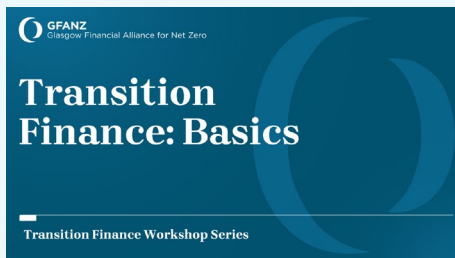


## GFANZ Workshops in a Box

GFANZ Workshops in a Box are a series of presentation materials that inform and educate on the GFANZ Transition Finance and Net-zero Transition Plan (NZTP) framework, as well as other methodologies and practices for practitioners. The presentations contain all the information needed to hold workshops with minimal preparation and can be held independently of each other. To date, we have published materials on:

- **Transition Finance** — Provides financial institutions with additional detail on the four key transition financing strategies (Climate Solutions, Aligned, Aligning, Managed Phaseout) and highlights potential methodologies for calculating them, including the Expected Emissions Reduction concept.
- **Net-zero Transition Plans** — Describes the ten components grouped into five themes, which together cover what GFANZ considers the vital elements of any credible net-zero transition plan.
- **Real Economy** — Provides financial institutions with potential avenues for engagement, in particular, information from real-economy companies to make decisions on the allocation of capital and services. It can also inform real-economy companies as they are developing their transition plans.

For more information and to access the latest publications (listed below), please visit [gfanzero.com](https://gfanzero.com).



### **Transition Finance: Basics**

This workshop provides a high-level overview of the four key financing strategies and the decarbonization contribution methodology of Expected Emissions Reductions.

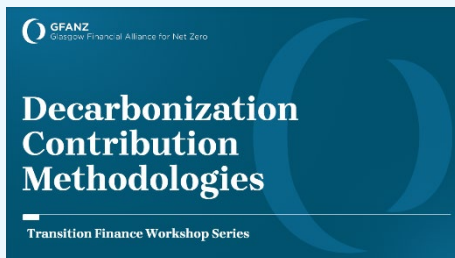
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### **Four Key Transition Financing Strategies**

This workshop dives deeper into the four key transition financing strategies and discusses their attributes in more detail.

[Download the resource](#)



### **Decarbonization Contribution Methodologies**

This workshop outlines proposed methodologies to calculate forward-looking metrics like Expected Emissions Reductions associated with the four key transition financing strategies.

[Download the resource](#)

## Background and introduction

To support a whole-economy transition to net zero, financing and related services across four key transition financing strategies need to scale. The IPCC estimates that a three- to six-fold increase in financing is needed by 2030 to limit warming to 1.5 degrees C.<sup>2</sup> The private financial sector has the scale to mobilize the majority of the necessary capital and enable real-economy decarbonization, with more than 675 financial institutions, representing 40% of global financial assets, independently committed to the goal of net zero by 2050 through membership in one of the sector-specific financial alliances comprising GFANZ.

The transition to net zero presents financial institutions with unprecedented opportunities to scale Transition Finance across all sectors of the economy. Decarbonization efforts by the real economy, supported by government policy and private finance all play a role in driving Transition Finance. GFANZ defines Transition Finance as investment, financing, insurance, and related products and services that are necessary to support orderly real-economy transition to net zero across four financing strategies:<sup>3</sup>

1. **Climate Solutions:** Entities and activities that develop and scale climate solutions;
2. **Aligned:** Entities that are already aligned to a 1.5 degrees C pathway;
3. **Aligning:** Entities committed to transitioning in line with 1.5 degrees C-aligned pathway; or
4. **Managed Phaseout:** The accelerated managed phaseout of high-emitting physical assets.

The 2023 GFANZ Secretariat *Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization* (the Note) expanded upon the

GFANZ Net-zero Transition Plan framework (NZTP) by identifying principles-based Attributes that can be applied to assess potential opportunities, portfolio holdings, and clients for applicability of the four key transition financing strategies.

In the Note, the GFANZ Secretariat proposed a new metric to support the scaling of Transition Finance: Expected Emissions Reductions (EER). EER is a complementary, forward-looking metric to evaluate the decarbonization contribution potential of exposures that may be considered alongside other metrics and targets used in net-zero transition plans. Though financed emissions and portfolio footprint measures are useful for measuring historical decarbonization and for setting targets, forward-looking metrics may more fully capture the “value add” of the decarbonization potential of high-emitting sectors and Climate Solutions. The GFANZ Secretariat acknowledges that, given the nascency of forward-looking measures, further refinement of the EER and its application is expected.

### Purpose and scope of this publication

The case studies included in this publication were voluntarily submitted by sector-specific alliance member financial institutions that were members of the GFANZ Transition Finance and Real-economy Transition workstream over the past year.

The case studies provide perspectives of specific financial institutions, the learnings from which may benefit other financial institutions independently involved in Transition Finance.

2 IPCC, [AR6 Synthesis Report: Climate Change 2023](#), March 2023.

3 GFANZ uses the term “orderly transition” to refer to a net-zero transition in which both private sector action and public policy changes are early and ambitious, thereby limiting economic disruption related to the transition (e.g., mismatch between renewable energy supply and energy demand). For reference, the [Network for Greening the Financial System](#) (NGFS), which develops climate scenarios used by regulators and others, defines “orderly scenarios” as those with “early, ambitious action to a net-zero GHG emissions economy,” as opposed to disorderly scenarios (with “action that is late, disruptive, sudden and/or unanticipated”). In an orderly transition, both physical climate risks and transition risks are minimized relative to disorderly transitions or scenarios where planned emissions reductions are not achieved. This explanation applies to all mentions of the term “orderly transition” in this document.

**Part I** of this publication offers case studies that illustrate how some financial institutions have independently developed and implemented transition financing approaches, applied the four key transition financing strategies to scale Transition Finance, and/or supported specific real-economy clients and portfolio companies to decarbonize. **Part I** includes a discussion of key themes and observations from the case studies.

**Part II** of this publication features case studies showing how select financial institutions have voluntarily piloted the EER metric. These case studies illustrate how forward-looking methods may be used to assess and quantify the decarbonization contribution potential for clients and portfolio companies, and to support decision-making and other use cases. **Part II** also summarizes key lessons learned from the EER piloting.

Throughout the publication, readers will find examples of other resources — complementary methodologies, tools, and platforms — that support scaling of Transition Finance or address areas for further work for EER. Readers are also encouraged to refer to relevant guidance developed by the net-zero alliances in support of implementation of various transition financing strategies and supporting metrics and targets.

Given the importance private finance plays in enabling the real-economy transition to net zero, the GFANZ Secretariat hopes the case studies and resources provided here can support finance practitioners and corporates in developing and implementing transition financing strategies, ensuring sufficient momentum to deploy the necessary capital for a net-zero transition across all sectors of the economy.

# Scaling Transition Finance and Real-economy Decarbonization

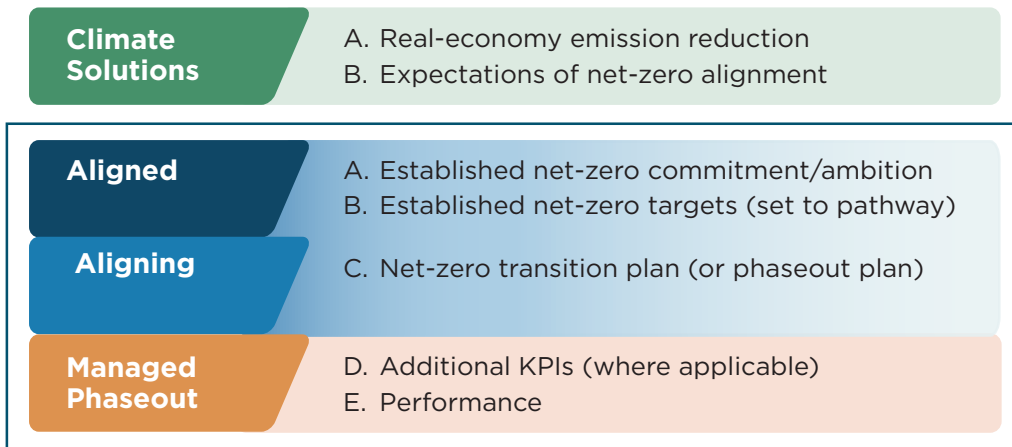
**Transition Finance must be scaled rapidly** — consistent definitions of Transition Finance and well-developed mechanisms to capture decarbonization potential may help to close the funding gap.



Four key transition financing strategies allow financial institutions to reduce real-economy emissions.

Currently used metrics may not always be sufficient to identify the opportunities with the greatest decarbonization potential across the four strategies.

## Part I – Refines attributes for identification of the four key transition financing strategies

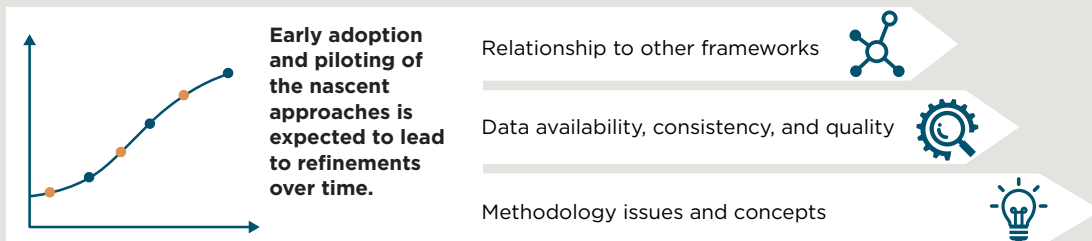


## Part II – Outlines quantification methods for decarbonization contribution

Introduces the concept of **Expected Emission Reductions (EER)** which are calculated using different methodologies, depending on the transition financing strategy.



### Look ahead



PART I

# Transition Finance Case Studies

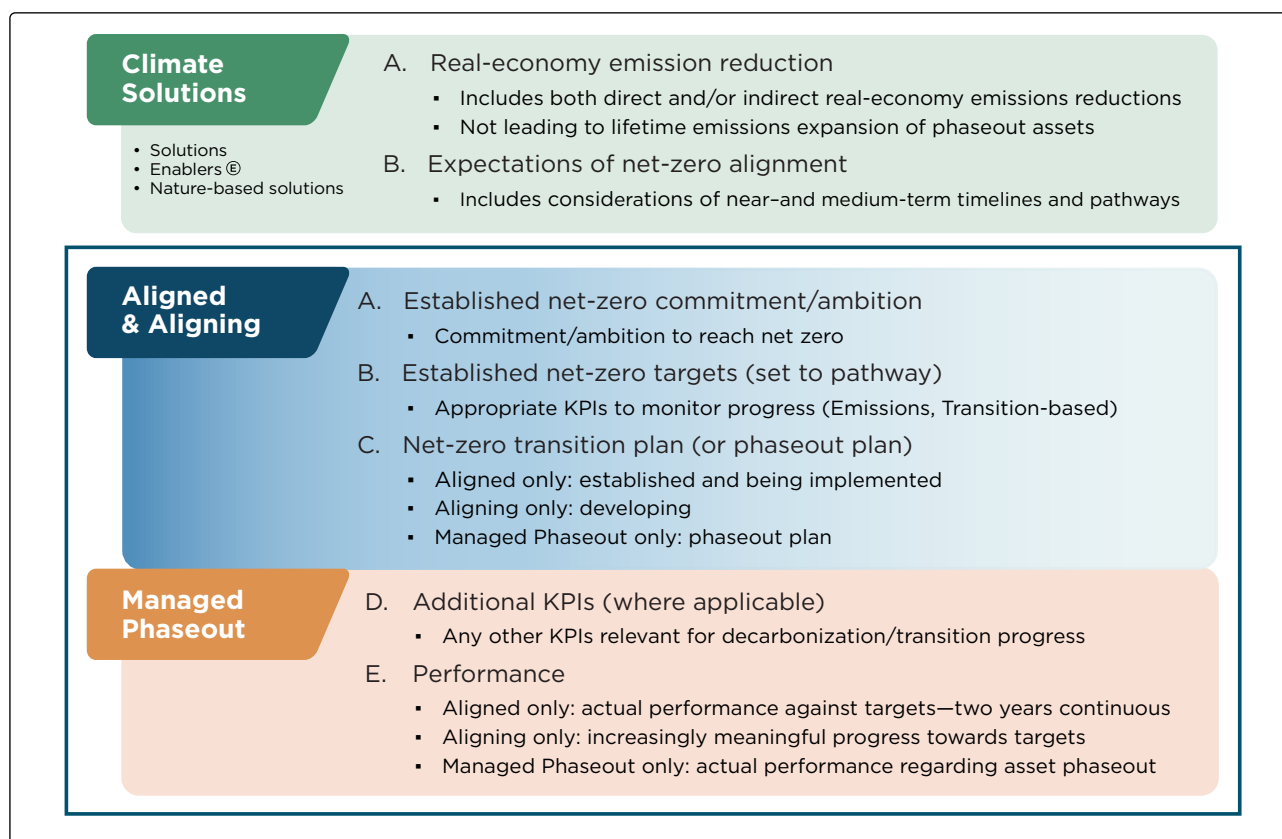


## BACKGROUND

The GFANZ NZTP framework (2022) defined Transition Finance and identified four key transition financing strategies that financial institutions, real-economy companies, and governments should support to enable an orderly and inclusive whole-economy transition. The four key transition financing strategies are pan-sector and globally applicable and provide a lens through which investment, underwriting, lending, and other enabling activities can be viewed to consider whether and how particular assets, activities, or entities can support and drive the net-zero transition.<sup>4</sup>

In the Note, the GFANZ Secretariat built on the concepts introduced in the NZTP framework, presenting pan-sector considerations for the analysis and measurement of Transition Finance. Part I of the Note outlined principles-based Attributes that build on the original GFANZ definitions of four key transition financing strategies.<sup>5</sup> The Attributes may be applied across different dimensions — for example, they can be used to identify opportunities and to analyze or segment holdings, portfolios, activities, and clients under each of the four key transition financing strategies.

**Figure 1: Summary of the Attributes for the four key transition financing strategies from the Technical Review Note**



4 For more details on how GFANZ defines Transition Finance, refer to the 2023 [Technical Review Note: Scaling Transition Finance and Real-economy Decarbonization](#) (December 2023).

5 When developing the Attributes, the GFANZ Secretariat was informed by other relevant frameworks, taxonomies, and guidance available at the time, as well as feedback provided through open consultation and discussions with practitioners and experts. For information on the frameworks that helped inform the development of the Attributes, see Table 1 (p. 15) of the 2023 [Technical Review Note: Scaling Transition Finance and Real-economy Decarbonization](#) (December 2023).

## PURPOSE AND SCOPE OF PART I CASE STUDIES

Part I comprises public case studies contributed by financial institutions for the purposes of this publication as examples of their individual transition financing approaches and/or real-economy transition financing transactions. It also includes examples, provided by relevant organizations and industry bodies, of relevant tools and other industry initiatives that support implementation of Transition Finance. The purpose is to illustrate how GFANZ's voluntary technical guidance on the four key transition financing strategies and/or individual firm approaches are being applied in practice by financial institutions.

The case studies and examples describe approaches to transition financing strategies and engagement, including opportunities unlocked and challenges faced by the relevant financial institution. The case studies describe:

### STRATEGY

- Firm-level transition financing strategies (that is, group-level financing or engagement strategies, portfolio mandates, etc.); and/or

### REAL-ECONOMY TRANSACTION

- Financing the decarbonization of specific real-economy clients, projects, assets, portfolio companies

Note that the case studies presented here are not meant to exemplify best practices or strict adherence to guidance related to the GFANZ four key transition financing strategies. They are offered as real-world examples of how some financial institutions are independently mobilizing capital and supporting initiatives to scale Transition Finance as they work to implement their individual net-zero goals. Readers should also remember that the financial institutions whose case studies are included here are subject to political, regulatory,

and environmental conditions that necessarily impact their approaches to Transition Finance.

The GFANZ Secretariat hopes the case studies offer insights that may be useful to financial institutions and real-economy companies as they develop and implement their net-zero transition plans.

## SUMMARY OF KEY OBSERVATIONS

Various observations can be drawn from the case studies, including the following:

1. Private finance can help enable the net-zero transition
2. Real-economy transition plans are critical for decision-making, as there is no one-size-fits-all approach to Transition Finance
3. Transition Finance is increasingly recognized as an opportunity area, and this calls for additional guardrails and clarity for effective implementation
4. Internal capacity-building and upskilling is critical to the execution of transition financing strategies

### Private finance can help enable the net-zero transition

To reduce global GHG emissions, real-economy companies across all sectors — supported by clear policy signals from government, and the provision of financing and related services from the financial sector — will have to decarbonize their business activities and scale Climate Solutions to replace high-GHG-emitting assets, products, and services. The role of private finance in the net-zero transition is to enable the decarbonization of the real-economy by engaging with clients and portfolio companies and providing them with the capital and financial services necessary to realize their decarbonization opportunities. As discussed in the Note, the scaling of Transition Finance underscores a broader paradigm shift from reducing financed emissions to financing real-economy emissions reductions.

Transition Finance requires a nuanced approach to accommodate different financial asset classes and portfolios in its implementation. For example, a bank looking to direct lending to clients for purposes of decarbonization may start with financing targets that are supported by a complementary engagement strategy, while an asset manager may focus on a targeted engagement strategy as a starting point. At the transaction level, to ensure the decarbonization impact of the investment can be accounted for, some financial institutions are assessing opportunities against longer-time horizons (e.g., industries with steep technological adoption curves that are at risk of locking in high-emitting technologies in the short-term). Other firms are independently developing their own proprietary transition financing approaches that emphasize an iterative process on a sectoral and/or regional level. By doing this, these firms leave room for re-assessment and the updating of targets and/or pathways as the market closes data gaps. The degree of intentionality also varies. For example, some firms have taken initiative to actively develop investment processes that consider the decarbonization and transition potential of opportunities; while others may assess potential Transition Finance opportunities within the context of their conventional financing and investment mandates.

Engagement has surfaced as an important way for financial institutions to identify and access the information necessary to support the scaling of Transition Finance.<sup>6</sup> Financial institutions, independent of one another, are engaging across the real economy, public sector, and academia to support the operationalization of net-zero commitments and identify opportunities to finance real-economy decarbonization. Financial institutions have highlighted the importance of

ongoing engagement with clients and portfolio companies in support of the development and/or implementation of net-zero transition plans. For Managed Phaseout opportunities in particular, engagement aimed at building strong operational partnerships and ensuring stakeholder support (including community and policymakers) is important not only to completing the transaction but fundamental in maintaining its desired impact and returns over time.

### **Real-economy transition plans are critical to decision-making, as there is no one-size-fits-all approach to Transition Finance**

Different regions and sectors have distinct economic dynamics, regulatory landscapes, and other factors (e.g., social, economic, technological, environmental, etc.) that may influence alignment or phaseout thresholds and timeframes. These regional variations and sector-specific variables necessitate a nuanced approach for each client and portfolio company and require granular data to support efficient capital allocation across transition financing strategies. Recognizing that data availability may be limited across regions and sectors (e.g., due to limited existing granular/fit-for-purpose scenarios and pathways) and that each company has specific business contexts, capital needs, and capabilities, understanding the starting point of each client and portfolio company and evaluating them on a case-by-case basis within the context of their environment is therefore essential for effective capital allocation decision-making.

Real-economy net-zero transition plans provide the company-level information necessary to help financial institutions identify the areas where Transition Finance is most needed, while also serving as a roadmap to support real-economy execution and ensure accountability. Real-economy

<sup>6</sup> Please refer to the [GFANZ Recommendations and Guidance on Financial Institution Net-zero Transition Plans report](#) discussion on Engagement Strategy theme for voluntary guidance and details, including considerations on engagement objectives, method, escalation, etc.



transition plans can provide financial institutions with important forward-looking information, such as an understanding of key decarbonization levers, capital expenditure needs, and timelines for feasible technological adoption. They also support engagement and the assessment of decarbonization progress.

Real-economy transition plans can provide clarity around a company's or sector's technological readiness and help financial institutions better understand potential changes in their own financed emissions. Transition plan implementation is often dependent on technological availability and/or commercial viability of projects. The adoption of new technologies can be essential for capturing the full decarbonization potential of a client or portfolio company. This is particularly true in hard-to-abate sectors where major technologies coming online over the next 10-25 years will determine the feasibility for net-zero alignment. Through the process of transition planning, clients and portfolio companies can highlight lock-in risks of high-emitting technologies as well as communicate reasonable timelines for decarbonization on a case-by-case basis, considering their specific sector and/or regional considerations.

Financial institutions acknowledged the importance of engaging with clients and portfolio companies to understand their starting points and decarbonization levers (considering scenarios/pathways, taxonomies, roadmaps, etc.), while also accounting for each company's specific resources, businesses, timeline, and challenges (as it relates to, for example, progress and expected timeline in developing a transition plan). Where available, financial institutions are using real-economy transition plans as a guide for targeted and continuous engagement with clients and portfolio companies. Real-economy transition plans can provide financial institutions with detailed entity-level information to inform engagement and/or implementation milestones where gaps in standardized data exist, as well as serving a

### BOX 1. EXPECTATIONS FOR REAL-ECONOMY TRANSITION PLANS

The GFANZ Secretariat recognizes that the depth and scope of each real-economy transition plan may vary depending on factors such as data limitations, company resources and capabilities, sectoral/regional factors, etc. Therefore, it is important for financial institutions to engage with clients and portfolio companies, where appropriate, to ensure the scope of the real-economy transition plans is proportionate to the nuances of the client or portfolio company while meeting the needs of the financial institution (e.g., for performance assessment).

Real-economy companies can look to voluntary frameworks, such as GFANZ's [Expectations for Real-economy Transition Plans report](#), for voluntary guidance on net-zero transition plan development. The report acknowledges that SMEs may face resourcing, data limitations, and other capacity issues, and provides considerations for addressing these challenges.

Given the critical importance of real-economy net-zero transition plans, the GFANZ Secretariat has included net-zero transition plans as a defining Attribute for Aligned and Aligning entities. As discussed in the Note, the GFANZ Secretariat recognizes that many real-economy companies may be advancing toward net zero but may not have a net-zero transition plan established and acknowledges that the development of a comprehensive net-zero transition plan often requires significant resources and time. Therefore, the Note highlights that Aligning companies should at least be in the process of developing a net-zero transition plan. For detailed discussion and further voluntary technical considerations, please refer to Part I of the Note on Aligned and Aligning strategies.

basis for monitoring progress and/or assessing performance over longer time horizons.

Both financial sector and real-economy transition plans benefit from clear transition planning at the national level that sets out the pathways, policies, and projects that a government expects to be necessary to deliver on its Nationally Determined Contribution (NDC).

The GFANZ Secretariat continues to underscore the importance of the development and implementation of net-zero transition plans by both real-economy companies and financial institutions. The GFANZ Secretariat welcomes the IFRS's plan to progress work on transition plan disclosures through ISSB (including by taking ownership of the UK's Transition Plan Taskforce (TPT) Disclosure Framework and developing educational materials for firms), which draws on components identified by the GFANZ NZTP framework. In time, the IFRS will consider developing formal ISSB transitional plan disclosure application guidance, aligned with its governance and stakeholder outreach processes. Transparency across all stakeholders via transition plans can foster trust and credibility, enabling real-economy companies and financial institutions to independently optimize decarbonization efforts over time and support the scaling of Transition Finance. The GFANZ Secretariat also welcomes the progress in some jurisdictions to set stronger expectations on firms about the need for transition planning, and transition plan disclosures, along with guidance on what that should consist of, while being mindful of the need to ensure global consistency and reduce the risk of fragmentation.

### **Transition Finance is increasingly recognized as an opportunity area, and this calls for additional guardrails and clarity for effective implementation**

In light of the critical need for financing to achieve net-zero and as more real-economy companies and financial institutions commit to net-zero goals,<sup>7</sup> importance of scaling Transition Finance is increasingly recognized. The opportunity and ways to direct capital across all sectors in support of decarbonization is being independently explored by financial institutions, considering risk-adjusted returns with potential of enabling real-economy emissions reduction. Further guidance and clarity from policymakers and regulators regarding their expectations and understanding of Transition Finance will be helpful to ensure financing is committed to the necessary areas, given specific region/sector context, and to foster an enabling environment for financial institutions to commit and allocate capital effectively without concerns about unexpected regulatory or supervisory reactions.

As mentioned, the implementation of Transition Finance requires a nuanced approach, with some financial institutions proactively adopting various approaches to capitalize on opportunities and/or in anticipation of potential enabling national policies and incentives.

Some financial institutions are using existing voluntary frameworks or building proprietary methodologies to support Transition Finance decision-making. Voluntary frameworks such as GFANZ and NZIF provide approaches, including attributes, criteria, and KPIs to support identification and assessment of transition financing opportunities.

<sup>7</sup> For further details on the funding gap and commitments, please refer to the Introduction in the GFANZ Secretariat. [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023.

Firm-specific proprietary methodologies can provide a customizable and fit-for-purpose approach to transition financing that can be inclusive of all clients and portfolio companies. Financial institutions are independently developing these proprietary methodologies, often based on – or in line with – voluntary frameworks, to ensure an approach that is appropriate for their portfolios. This may include development of more detailed KPIs to assess alignment of exposures to sectoral pathways; engagement metrics to support client/ portfolio company progression on a maturity scale or regional roadmap; or complementary forward-looking measures to capture decarbonization potential of exposures (e.g., EER).

Many of the approaches incorporate the use and assessment of real-economy transition plans, alongside other guardrails (e.g., scenarios and pathways) to enhance credibility of transition financing. Further developments in assessment frameworks and methods to verify/audit these plans will be helpful in catalyzing Transition Finance. The GFANZ Secretariat has included select examples of relevant resources and emerging voluntary assessment frameworks in this publication for reference.

## BOX 2. SCENARIOS AND PATHWAYS

Climate scenarios and pathways provide a link between the science of the remaining carbon budget and detailed steps that a specific sector or region could take to reduce GHG emissions in a specified timeframe. Quality and credible pathways can provide a benchmark on the pace and timing of GHG emissions reductions needed; identify the interdependencies between sectors; and articulate the underlying actions that can be taken or the changes that would drive the specified transition.

Financial institutions can refer to the [GFANZ Guidance on Use of Sectoral Pathways report](#) for voluntary guidance and a framework to evaluate suitability of sectoral pathways in support of transition planning and implementation.

While there has been significant development in policies and standards on disclosure (e.g., ISSB), there remains an opportunity for governments and policymakers to bring greater clarity to the landscape of Transition Finance. By identifying region-specific Transition Finance activities that align to national net-zero goals, taxonomies, pathways, and national transition plans, governments can provide clarity to real-economy companies to ensure that firm-level transition plans and capital from private finance is supporting the

necessary decarbonization levers, communities, and sectors within their region. Policymakers can develop regulations, standards, and enabling policies to ensure broader alignment to national and global net-zero ambitions. A more stable and clear policy environment also has the potential to enable longer term capital commitment across transition financing strategies, as well as support development of granular regional and sectoral pathways for net-zero transition and therefore close a critical data gap for investment.

Considering the momentum and ongoing development of enabling approaches and policies for Transition Finance, the GFANZ Secretariat continues to emphasize the importance for all stakeholders to maintain transparency regarding the use of different methodologies, approaches, and assumptions. For example:

- Real-economy companies can articulate their decarbonization levers and how they support the company's net-zero ambitions, ideally within a net-zero transition plan.
- Similarly, financial institutions can be explicit about the frameworks and approaches they adopt to assess transition financing opportunities, including the main criteria and key inputs/assumptions they use.
- Transparency of material assumptions behind policies and national plans/roadmaps can provide the starting point and forward-looking perspectives necessary to support real-economy companies in developing transition plans and financial institutions to inform transition finance decision-making.

### **Internal capacity-building and upskilling is critical to the execution of transition financing strategies**

From the top-down, senior leadership buy-in and engagement has been identified as important for the integration of Transition Finance into the overall strategy and objectives of a financial institution. This may include linking remuneration

to meeting Transition Finance targets and/or portfolio decarbonization performance. From the bottom-up, capacity-building and upskilling has been highlighted as essential to the integration of Transition Finance approaches into traditional business models by enabling a culture where the workforce incorporates climate considerations in their strategies and day-to-day operations.

Financial institutions are investing resources to upskill their workforces in support of Transition Finance specific opportunity identification and structuring, due diligence, and portfolio management. Direct experience and knowledge in transition planning and target-setting processes have been identified as particularly helpful for upskilling.

Internal collaboration across different departments and business units has also been identified as critical to the due diligence process all the way through closing the deal and portfolio management. Demonstrating internal alignment supports incorporation of net zero into firm culture, fosters trust-building, and supports engagement with external stakeholders. Internal alignment enables different business units to refine and incorporate Transition Finance into their respective strategies, risk appetites, etc., that can, in turn, support implementation and scaling of Transition Finance (e.g., via targeted deal origination that satisfies risk-return profile and Transition Finance criteria as outlined in the financial institution's net-zero transition plan).

Financial institutions acknowledged that to effectively implement transition financing approaches, increase capacity-building, and support the various teams involved, it is important to ensure the necessary systems and processes are in place and that the infrastructure to facilitate integration and execution across different business units is updated periodically.

### BOX 3. GFANZ NZTP FRAMEWORK (GOVERNANCE THEME) AND OTHER RESOURCES

The importance of culture, change management, and upskilling is integral to the Governance theme of the GFANZ Net-zero Transition Plan framework. For detailed voluntary recommendations and guidance on these aspects, please refer to the [GFANZ Recommendations and Guidance on Financial Institution Net-zero Transition Plans report](#).

Upskilling and capacity building is also important for clients and portfolio companies to enable effective engagement with their financial institutions. Please refer to the Governance theme in the [Expectations for Real-economy Transition Plans report](#) for further detail.

The GFANZ Secretariat developed [Workshops in a Box training materials](#) that can help inform and educate on the GFANZ Net-zero Transition Plan framework and Transition Finance. The presentations contain all the information needed to hold workshops with minimal preparation and the workshops can be held independently of each other.

Financial institutions can engage external climate experts and resources to train and upskill internal teams. This publication includes several supplemental Transition Finance resources for reference.

# Transition Finance case studies

Climate  
SolutionsAligned &  
AligningManaged  
Phaseout

## 1. BANCO BILBAO VIZCAYA ARGENTARIA (BBVA)

**Sector:** Bank

**HQ Geography:** Spain

**Firm Overview:** [BBVA](#) has EUR 801.7 billion in total assets. It operates in more than 25 countries. It has a strong leadership position in the Spanish market and is the largest financial institution in Mexico. It also has offices in South America and Turkey.

BBVA is one of the 43 founding members of the Net Zero Banking Alliance (NZBA). It has been recognized as a “first mover and doer” in the UN publication: “Integrity Matters: Net Zero commitments by Businesses, Financial Institutions, Cities and Regions”, published by the High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities.

BBVA has been signed to PCAF since 2021 and has been signed to RE100 since 2019.

BBVA also participates in a wide range of forums such as: the United Nations Environmental Program Financial Initiative (UNEP FI); Alliance of CEO Climate Leaders (WEF); and the Institute of International Finance (Sustainable Finance Group and Voluntary Carbon Markets groups).

For additional details about BBVA’s climate finance targets and transition plan, see its [TCFD report](#) (December 2023) and [Sustainability Equity Story](#) (June 2024).

### STRATEGY

#### Overview of BBVA’s Transition Finance Strategy

BBVA’s Transition Financing Strategy is based on two objectives:

1. Promoting new business through sustainability (channeling sustainable business); and
2. Achieving Net Zero Emissions by 2050 (setting and managing decarbonization targets by 2030).

BBVA has developed its own internal methodologies to evaluate clients’ transition plans and the degree of preparedness to face transition to a lower carbon economy. BBVA takes many of the attributes considered under the four key transition financing strategies developed by GFANZ into account in its internal methodologies in line with the GFANZ pan-sector analyses. Additionally, BBVA’s internal methodology includes sector-specific variables that allow it to assess clients’ efforts, risks, and opportunities in hard-to-abate sectors.

To assess clients' current emissions profile and decarbonization strategies and rank them by their exposure and preparedness to transition risk, BBVA uses specific tools based on its Transition Risk indicator (TRi). The TRi combines a company's current low-carbon profile as well as a forward-looking vision regarding its commitments, actions, and implemented levers aimed at transitioning to a low carbon economy.

As a result of BBVA's internal analysis, to aid it in developing strategies with clients, it classifies clients into four blocks:

1. **Advanced:** companies with business models that inherently benefit from the transition
2. **Robust:** companies with strategies and plans that mitigate carbon exposures
3. **Moderate:** companies with material exposure to carbon transition risk
4. **Poor:** companies whose business models are fundamentally inconsistent with the transition

[BBVA's 2023 TCFD](#) report includes a description of the TRi methodology and a diagram (page 64) with the TRi results by sector in December 2023. Most of the clients in the portfolio are classified as moderate/robust according to the TRi analysis.

The TRi aims to measure a client's transition risk by making an overall assessment of the current awareness of the company with regard to climate change as well as making an evaluation of their carbon transition risk. The TRi takes into consideration metrics regarding the four key dimensions of the Task Force on Climate-Related Financial Disclosure: governance, strategy, risk management, and metrics and targets.

The metrics fall within the scope of Aligned and Aligning GFANZ strategies because they aim to assess criteria such as a client's commitment and targets to net zero and GHG emissions track record. Metrics to evaluate the development and/or implementation advances of a client's transition plan, key in GFANZ's Aligned or Aligning distinction, are assessed based on the degree of decarbonization levers the client implemented.

Furthermore, the TRi also includes sector-specific variables to assess a company's current profile of transition toward decarbonization, exposure to medium-term technology/policy/market risk, and midterm transition strategy. This approach builds on pan-sector methodologies such as GFANZ's to obtain sectoral views in line with BBVA's established decarbonization targets.

The monitoring of TRi allows BBVA to assess the credibility of its clients' transition plans and to track their implementation.

BBVA's internal methodologies are in line with GFANZ's Aligned/Aligning strategy and with the creation of a new area focused on clean tech it maintains a clear commitment to supporting clients considered as Climate Solutions/Enablers. Additionally, the TRi incorporates metrics to measure the level of investment that clients from high emitting sectors make in low carbon projects that are considered Climate Solutions or enablers, such as carbon capture and storage and green hydrogen.

BBVA also has a Managed Phaseout strategy that is demonstrated by its objective of phasing out activities related to thermal coal, ceasing to finance companies active in these activities by 2030 in developed countries and before 2040 globally.<sup>8</sup>

<sup>8</sup> See additional detail on page 73 of the [TCFD](#).

## Governance and performance tracking

According to the Net Zero Banking Alliance (NZBA) guidelines, within 12 months of the publication of sectoral targets, banks signed to the alliance must publish, at a minimum, a high-level transition plan outlining the actions they plan to implement to meet the targets (client support; sectoral policies; capacity building; development of tools and products; strategy to increase the customer base; etc.). To satisfy its commitment, BBVA has developed sectoral alignment plans that make it possible to analyze the part of its portfolio with the highest CO<sub>2</sub>e emissions and it has deployed a decarbonization strategy to meet the goal of net-zero emissions by 2050.

BBVA has set intermediate emissions reduction targets for 2030 for 10 sectors: oil and gas; power generation; automobile; steel; cement; coal; aviation; shipping; the Spanish real estate sector; and aluminum. The NZBA, in its [Guidelines for Climate Target Setting for Banks](#), establishes what sector-level targets shall be set. An overview of BBVA's targets can be found on [page 10 of the Sustainability Equity Story](#).

To monitor the alignment objectives of the sectors for which targets have been set and to supervise their compliance, BBVA created the Sustainability Alignment Steering Group (SASG) in 2022. SASG reports to the highest executive level and to the Corporate Bodies at least every six months.<sup>9</sup> BBVA strengthened its sustainability alignment governance in 2023 with the addition of Global Sectoral Heads introduced in Corporate and Investment Banking (CIB) for sectors with 2030 decarbonization targets. These sectoral leaders are responsible for: leading the business strategy for each sector; executing on the actions defined in the sector alignment plans; and implementing a support plan with clients in the sector to help them in their transition to a low carbon economy.

BBVA monitors intermediate decarbonization targets through alignment methodologies that help it understand how financial flows contribute to emissions reductions. These metrics are benchmarked against the reference provided by climate change scenarios and, in conjunction with these, allow BBVA to design sectoral alignment plans. These plans help define commercial strategies with clients and guide selective growth based on risk considerations and business opportunities, as well as help with evaluation of clients' transition plans.

The sectoral alignment plans make it possible for BBVA to analyze the part of its portfolio with the highest CO<sub>2</sub> emissions and to deploy a decarbonization strategy to meet the goal of net-zero emissions by 2050. Each plan includes a detailed analysis of each sector, assessing its role in the decarbonization of the economy; identifying opportunities and risks; and defining response strategies. The sector alignment plans include an analysis of the current state of the portfolio and the situation with respect to the target set by BBVA for the sector.

The plans are based on risk considerations and on the identification of business opportunities with existing and new clients, expressed through different levels of appetite for clients in the sector.<sup>10</sup>

Clients are selected for engagement based on their business relevance and ESG or emissions profile. The client engagement plans reflect BBVA's unified and global ESG approach to clients, which is key to implementing a credible and consistent sustainability strategy. The engagement plans aim to support clients while ensuring they commit to carry out actions that contribute to improving their transition and ESG profile.

<sup>9</sup> See additional detail of functions in BBVA. [TCFD](#), 2023, p.77.

<sup>10</sup> For further detail, see BBVA. [TCFD](#), 2023, pp.75-76.



The sectoral alignment plans and client support plans are embedded in BBVA's sectoral business strategy, as they are key inputs to determine overall strategy. As part of its ongoing efforts, an annual process has been established for reviewing key client projections from a climate alignment perspective, which influences the development of BBVA's annual business plan. During this review, BBVA assesses changes in the outcomes for each client across various sectors, monitoring the progress or deterioration of their plans in accordance with the attributes set forth in the GFANZ Aligning/Aligned strategy. It performs quarterly follow-ups regarding its decarbonization targets and portfolios, to monitor their progress, which it publishes ([Equity Story May 2024](#), pages 11-16, 22-23).

In addition to financing the transition through its business, BBVA contributes to the development of new and innovative Climate Solutions through investment commitments in climate funds focused on decarbonization. These funds invest globally in companies at the forefront of technological and climate innovation, seeking innovative Climate Solutions that help decarbonize the planet. Specifically, in 2023, BBVA made investment commitments to Just Climate, Suma Capital, LowerCarbon, and the first fund of Decarbonization Partners (a joint venture of BlackRock and Temasek). These investment commitments join the commitments made by BBVA in 2022 (Hy24, Fifth Wall, LowerCarbon Fund).

BBVA also contributes to the development of new and innovative Climate Solutions through investments in climate equity funds with a focus on decarbonization, investing in technologies with enormous impact potential. For example, BBVA launched a unit to finance cleantech innovation in 2024 ([press release Feb 2024](#)). The specialized unit, with team members in New York, London, and Madrid, offers lending and advisory services.

### Considerations and learnings to ensure that BBVA's strategy is implemented

1. Leadership from top management is critical. BBVA adapted policies and governance to promote its transition financing strategy and ensure transition financing is embedded in its overall strategy.
2. Training is an essential part of its strategy. BBVA is constantly training its employees regarding its transition finance, employing both internal and external training.
3. BBVA believes it is critical to incorporate sustainability-related indicators into all employees' variable remuneration.
4. Since 2021, all employees' annual variable remuneration is linked to the mobilization of sustainable business (10% of variable remuneration).
5. Since 2023, long-term variable remuneration scheme of risk takers (executive directors and senior management) is linked to decarbonization targets (15% of three-year variable remuneration).
6. BBVA believes it is important to create specific governance structures and committees with multidisciplinary teams (Business, Risk, Sustainability).<sup>11</sup>

BBVA acknowledges the relevance of integrating the transition finance strategy into the assessment, monitoring, and implementation of engagement plans with its clients.

The attainment of — and progress toward — decarbonization targets will greatly depend on the actions of others, such as clients, governments, and other stakeholders, and therefore can be materially affected by factors that are external to BBVA (for example, new technological developments, regulations, armed conflicts, the evolution of the climate, and energy crises themselves, etc.). As a result, targets may be subject to future revision.

<sup>11</sup> See additional detail on page 25 of the [TCFD](#).

BBVA has moved forward with developing internal methodologies to anticipate clients' needs and support their transition plans. The methodologies also include sector-specific variables aimed at providing insights into clients' efforts, weaknesses, and opportunities that fit well within the scope of the GFANZ pan-sector guidance and provide more sector-specific considerations, based on — and linked to — BBVA's sector strategy.

A key pillar of BBVA's transition finance strategy is the implementation of client engagement plans. These plans provide support to clients while ensuring that clients commit to actions that contribute to improving their transition journey and ESG profile.

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#### BOX 4. ASSESSING TRANSITION PLAN COLLECTIVE (ATP-COL)

In June 2024 ATP-Col launched for consultation (which closed in mid-July), the [Assessing companies Transition Plans Collective \(ATP-Col\) guidance document](#). The ATP-Col aims to collaboratively develop a consensual framework with guidance on how to assess companies' transition plans' credibility. Since its inception, the working group has been developing a guidance document, providing a coherent framework that can be used to promote consistency among assessors' practices. The final version of the guidance document is set to be released at New York Climate Week.

#### BOX 5. CLIMATE BONDS INITIATIVE (CBI)

Building on the foundational work of [Transition Finance Mapping](#), in 2024 CBI launched its [Navigating Corporate Transitions: a tool for financial institutions](#) paper, which presents a methodology for a tool designed to aid financial institutions in assessing and categorizing corporates by their transition credibility and maturity.

## 2. CAISSE DE DÉPÔT ET PLACEMENT DU QUÉBEC (CDPQ)

**Sector:** Pension Fund/Asset Owner

**HQ Geography:** Canada

**Firm Overview:** CDPQ is a global investment group with offices in nine countries and presence in all major markets with CAD 434 billion in assets as of 31 December 2023.

CDPQ invests constructive capital, i.e., in private equity, equity markets, private credit, infrastructure, and real estate, to create value and position its portfolio companies to succeed. It directs capital toward a greener and more equitable transition and generates growth while contributing to a more sustainable world.

It has CAD 53 billion invested in low-carbon assets and it has reduced its portfolio's carbon intensity by 59% since 2017.

CDPQ is an active member of the UN-convened Net-Zero Asset Owner Alliance (NZAOA), participating in the policy and financing track. CDPQ is actively involved in the four NZAOA FinTrack working groups. CDPQ is also an active member of the Global Investors for Sustainable Development (GISD), the Sustainable markets initiative (SMI), the Investor Leadership Network (ILN), the B20, and other investor-led climate initiatives.

### STRATEGY

#### CDPQ's approach to Transition Finance

For the last several years, CDPQ has been supporting portfolio companies in heavy emitting sectors with their decarbonization strategies. The targeted sectors are:

- **Agriculture:** With the creation of its Sustainable Land Management team in 2020, CDPQ aims to invest in agricultural lands that can generate positive environmental and social impacts. It aims to deploy up to CAD 2 billion by 2026 in the forest and agricultural land sectors. Its investments comply with the highest ESG standards. Among these assets, US\$ 370 million is focused on carbon capture, wetlands restoration, and species protection.
- **Electricity production:** A strategic sector for CDPQ with regards to energy transition, especially in emerging markets.
- **Transportation:** High emitting sector needing to reduce its emissions.
- **Materials**

CDPQ believes that because these industries are critical to the economy, they must start

decarbonizing their operations immediately to reduce their impact on global emissions, in accordance with the Paris Agreement.

CDPQ began investing in energy companies in 2015 to support their shift from reliance on high carbon energy to sustainable alternatives like renewables. With the help of CDPQ, these companies have become pioneers in their areas with ambitious SBTi-approved decarbonization strategies, showcasing CDPQ's active investment in assets undergoing transition. Recent investments include:

- [Gunn Agri Partners](#) (GAP): with the Clean Energy Finance Corporation (CEFC), an Australian government-owned green bank, CDPQ is investing US\$ 178 million over three years to acquire agricultural land in Australia that will be managed by GAP and that will employ sustainable and regenerative farming practices.
- [AGL Energy](#): an Australian energy company serving about 4.3 million customers. CDPQ is supporting the completion of its transition plan from coal-fired electricity to renewable energy generation by June 2035, up to a decade earlier than previously planned.

In 2021, CDPQ earmarked a CAD 10 billion envelope (the “Transition Envelope”) aimed at decarbonization of the highest-emitting sectors. CDPQ’s investment in AES Indiana is part of that envelope, along with other investments in renewable energy, electricity production, and transmission. CDPQ currently holds CAD 5 billion of assets in the Transition Envelope.

### REAL-ECONOMY TRANSACTION

Climate  
Solutions

Managed  
Phaseout

## AES Indiana

**Sector:** Infrastructure/Power

**HQ Geography:** Indiana, USA

**Asset Class:**

Direct Infrastructure Private Equity

**Investment Horizon:** 20+ years

AES Indiana, formerly the Indianapolis Power & Light Company (IPL), is a U.S. regulated utility company engaged in generating, transmitting, and distributing electricity to more than 520,000 customers in the state of Indiana, primarily in the city of Indianapolis. Acquired in 2001 by AES Corporation, AES Indiana has become AES Corporation’s (AES Corp.’s) largest utility.

In 2014 CDPQ acquired an initial 15% stake in IPL and increased its stake to 30% in 2016 by financing IPL’s capital investment program, which included replacing a significant portion of its coal generation capacity with natural gas capacity and installing new equipment to reduce the environmental footprint of the remaining coal units.

Since 2021 CDPQ reinvested in AES Indiana (these reinvestments qualified for CDPQ’s Transition Envelope) to strengthen and modernize its transmission and distribution infrastructure; add 1.3 GW of renewable energy capacity; and convert its last coal-fired units to natural gas.

Thanks to these investments, AES Indiana’s coal production decreased from approximately 80% of installed capacity in 2014 to 35% in 2023. The remaining coal capacity is expected to be completely phased out by 2026, making AES Indiana the first investor-owned utility to cease burning coal in the state of Indiana.<sup>12</sup> The phase out is the latest milestone in a transition plan that has been executed over 10 years since CDPQ’s initial investment in AES Indiana. The phase out also aligns both with CDPQ and AES decarbonization objectives.

### Investment thesis

AES Indiana aligns well with CDPQ’s long-term investor profile, especially given its strong alignment in long-term values and objectives, particularly with respect to coal capacity reduction and environmental capex. Furthermore, AES Indiana’s residential tariffs are among the lowest of all investor-owned utilities in Indiana.

### CDPQ’s role

CDPQ provides support for AES Indiana’s investment program, which includes increasing renewable energy capacity and the phase out of existing coal capacity.<sup>13</sup> Looking ahead, AES Indiana’s energy mix will be comprised of renewable energy (wind, solar, energy storage) and natural gas.

<sup>12</sup> The AES Indiana coal phaseout plan included retiring the 230 MW Petersburg Unit 1 in May 2021 and the 415 MW Petersburg Unit 2 in June 2023. The conversion is projected to be completed in 2026 and the utility estimates it will save customers around US\$ 280 million over 20 years and reduce CO<sub>2</sub> emissions by 43%.

<sup>13</sup> Pending approval from the Indiana Utility and Regulatory Commission (IURC) for the application for a Certificate of Public Convenience and Necessity (CPCN) to convert its remaining Petersburg Units 3 & 4 from coal to natural gas, filed on 11 March 2024, CDPQ and AES Corp. will inject further equity in AES Indiana to fund the conversion project.

CDPQ actively supports the board of AES Indiana to work with management to meet its climate targets and net zero ambitions.

### Climate Solutions

CDPQ is providing AES Indiana support to add new renewable energy capacity in its generation mix. AES Indiana is currently building a 250-megawatt solar and 45-megawatt battery storage project at the Petersburg plant site to take advantage of its favorable location and existing interconnection to the grid, while also continuing to invest in this community beyond coal.

AES Indiana also recently commissioned its first renewable energy project, the 195-megawatt Hardy Hills solar project in Clinton County, Indiana, which became fully operational in May 2024. AES Indiana also purchased a 106-megawatt wind farm from EDF Renewables in February 2024, the Hoosier Wind Farm in Benton County, Indiana, terminating an existing power purchase agreement between the two companies while also providing cost savings in excess of [US\\$ 20 million](#) over the next six years to AES Indiana's customers. AES Indiana plans to add up to 1,300 MW of renewable energy to its generation portfolio by 2027.

The CDPQ/AES Corp. partnership supports the Climate Solutions strategy by increasing renewables capacity, which enables the broader AES Indiana decarbonization strategy that aims to support the longer-term shift from coal to cleaner energy sources and ensure a just transition for workers and communities affected by the coal phase out.

### Managed Phaseout

The AES Indiana coal phase out plan included retiring the 230 MW Petersburg Unit 1 in May 2021 and the 415 MW Petersburg Unit 2 in June 2023. AES Indiana has filed a request to its regulator to convert its two remaining coal units to natural gas by 2026. The project will reduce the carbon intensity by about [70%](#) compared to 2018 levels while still providing affordable and reliable power to its customers.

AES Indiana's plan also demonstrates AES Corp.'s commitment to long-term sustainability goals. AES Corp. has set a target to reduce its carbon intensity by 70% by 2030 (compared to 2018 levels) and achieve net-zero emissions from electricity by 2040 and net-zero emissions for the entire business portfolio by 2050, in line with the intensity below [2 degrees C scenario](#).

### Lessons learned

One of the main lessons learned from this investment is the importance of establishing a long-term partnership based on a shared vision and common objectives. The strategic alignment between CDPQ and AES Corp. underpins the strength of this collaboration and is critical to success in the decarbonization process, which is still underway. This collaboration has enabled CDPQ to support AES Corp.'s strategic vision of accelerating the energy transition and delivering sustainable growth for its stakeholders. CDPQ and AES Corp. adopted their respective climate strategies around the same period, which in part explains the strong relationship through the alignment of interests.

The vision of a greener and more resilient energy sector requires a clear and ambitious decarbonization and phase-out plan that guides the decision-making process and creates value for all parties involved. This is another key lesson learned from this partnership. AES Indiana's

decarbonization strategy is an example of how a utility company can transition from coal to a cleaner energy source while maintaining reliability and affordability for the benefit of its clients. The approach favors environmental conservation, aligned with AES Corp.'s objectives to reduce its carbon intensity by 70% by 2030, thereby helping the utility realize its net-zero emissions target by 2050. Furthermore, the strategy supports the social aspects of the transition, as it considers the impact on the workers and communities affected by the coal plant partial closure and conversion and provides them with fair and respectful treatment.

The third lesson learned by CDPQ through this process was the importance of alignment between teams within CDPQ to ensure a smooth and efficient assessment and execution of the investment opportunity. It is especially important for the support teams surrounding the investment team to understand the business plan, especially with regard to the decarbonization plan. At first glance, an investment that involves an electricity provider using coal might look like a step back with regards to CDPQ's environmental ambition and plan, but the long-term goal of transforming a carbon-intensive power generator into a cleaner utility resonated with all the teams involved in the process. The alignment between internal teams facilitated the communication and trust building with the strategic partner and contributed to the success of the partnership.

Another aspect of this third lesson was the need for international cohesion in the development of innovative tools to be able to finance the energy transition. In CDPQ's case,

the innovative tool in question is the Transition Envelope. Without this innovative tool, had CDPQ invested capital in an enterprise with high carbon emissions, this would have given the impression of going against CDPQ's global sustainability objectives, which would have affected its credibility as a global leader in sustainability practices. According to the decarbonization plans of all the companies currently included in the Transition Envelope, CDPQ's capital will help these companies reduce their carbon footprint by 31% by 2030 and by 85% by [2035](#). This innovative tool enables CDPQ to be more proactive in its climate ambitions and invest in sectors where capital is needed to achieve emissions reductions.

#### BOX 6. EXTERNAL RESOURCES

[CDPQ and GE Renewable Energy partner in global wind and solar power](#)

[CDPQ-AGL Energy](#)

[CDPQ's Sustainable Investing Report](#)

[AES Indiana press release](#)

[AED Indiana press release](#)

[AES Indiana Annual report](#)

[Indiana Capital Chronicle](#)

[Indiana Utility Report](#)

### 3. COMGEST<sup>14</sup>

**Sector:** Asset Manager

**HQ Geography:** France

**Firm Overview:** Comgest is an equity-focused asset manager with a quality growth investment philosophy that has guided its portfolios consistently for the past three decades. As long-term investors, understanding its investee companies’ climate profiles is a key element of its investment process.

In 2022 Comgest became a signatory to the Net Zero Asset Managers (NZAM) initiative and in 2023 it set its initial climate targets across 100% of its listed equity assets under management (AUM). Comgest’s ESG team worked closely with its investment team when establishing these targets, agreeing that the targets would help it navigate climate-related risks and opportunities, respond to current and upcoming regulations, and satisfy client requirements.

14 Comgest S.A. is a portfolio management company regulated by the Autorité des Marchés Financiers with its registered office at 17, square Edouard VII, 75009 Paris, France.

#### STRATEGY

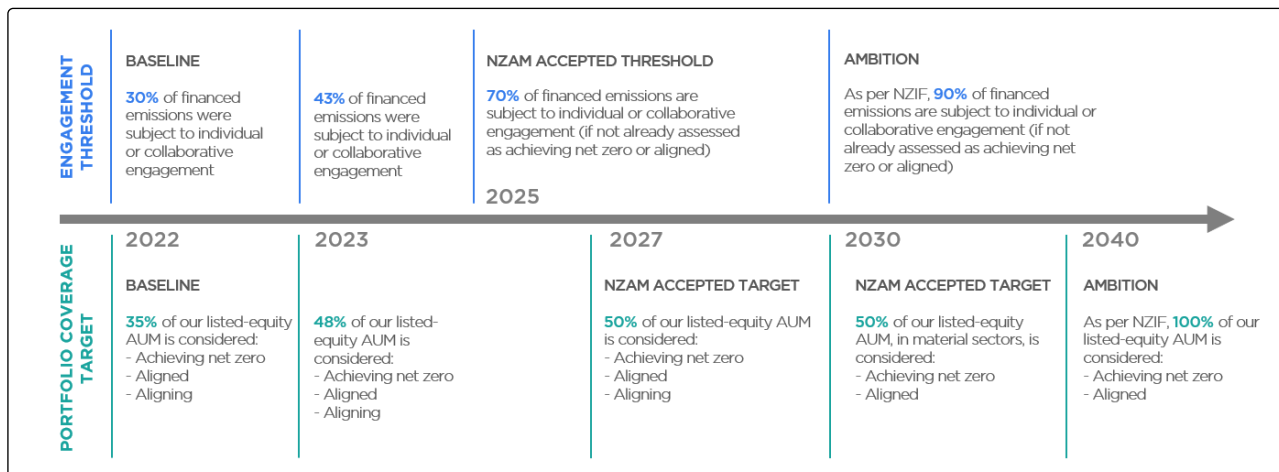
#### SETTING ASSET LEVEL TARGETS USING THE NET ZERO INVESTMENT FRAMEWORK

#### Implementing the Net Zero Investment Framework

When it came to selecting a target setting methodology, it was important for Comgest to

match high standards for quality with flexibility and pragmatism. It recognized that the climate challenge ahead is immense and it needed to pull multiple levers to contribute to real-economy decarbonization. The “dashboard” approach provided by the Net Zero Investment Framework (NZIF), focusing on several targets instead of one, was the key element that pushed Comgest to select such an approach.

**Figure 2: Comgest’s climate targets and roadmap**



Source: Comgest, 31 December 2023.

At this stage, Comgest has set two climate targets using the NZIF guidelines: an **engagement threshold** and a **portfolio coverage target** (asset alignment target). It sees these targets as complementary: assessing companies' alignment allows it to identify engagement priorities and asks, and engaging with companies allows it to better monitor climate alignment progress and contribute to improving companies' climate profiles.

### Engagement threshold

Active ownership is central to Comgest's responsible investment approach and climate strategy. As long-term investors managing high conviction, concentrated portfolios, it aims to develop strong relationships with its companies. Regarding climate, it prioritizes investee companies that represent the highest share of Comgest's financed emissions and that are least advanced on their climate alignment. Comgest's target is to engage companies that represent 70% of its financed emissions by 2025. In pursuit of this target, it takes the following steps:

#### 1. Calculate Comgest's financed emissions on an annual basis

To calculate financed emissions, Comgest uses MSCI carbon emissions data and Enterprise Value Including Cash data and considers all three scopes of emissions. The data used is either reported or estimated. Including Scope 3 data (even if estimated) allows Comgest to have a more comprehensive view of companies' risks and impacts and ensures it targets for engagement the highest emitting actors and most at risk actors.

#### 2. Establish a climate engagement priority list on an annual basis

Comgest selects the companies that represent 70% of its financed emissions and that are not considered to have reached the Aligned status yet (detailed below). This represents approximately 30 companies. This list is shared with Comgest's ESG Analysts and Company Analysts.

#### 3. Engagement and monitoring throughout the year

ESG Analysts and Company Analysts lead the engagement efforts throughout the year and progress is measured on a quarterly basis against engagement asks. Prior to an engagement starting, the ESG team can prepare a "climate engagement sheet" that summarizes a company's climate profile as well as engagement asks. These asks are notably derived from gaps found against key frameworks, including [Climate Action 100+'s \(CA100+\) Net Zero Company Benchmark](#), [IIGCC's Investor Expectations of Corporate Transition Plans](#), and [Transition Pathway Initiative's Management Quality](#). Asks are adapted to each company's context and climate profile. For instance, for companies that have not developed a climate strategy, Comgest might initiate dialogue on topics such as climate-related disclosure or target setting. For companies that have already set targets, discussions will focus on monitoring progress against these targets; assessing what challenges might be encountered on delivering on them; and, where applicable, discussing the company's contribution to climate solutions and capital allocation strategy. The climate engagement sheet also summarizes past climate engagement activities and outcomes, as well as past significant climate votes.

#### 4. Reporting and transparency

At the end of the year, Comgest checks the engagement status of all companies on its priority list and in its Annual Sustainability Report it reports on the share of financed emissions it has engaged. Its investment style generally leads to low portfolio rotation on an annual basis, ensuring continuity in its engagement activities. Out of the 28 companies on its 2024 climate engagement priority list, 23 were present on its 2023 list. Updating the list of companies representing 70% of its financed emissions on an annual basis ensures that Comgest always focuses engagement resources on highest emitters for which climate is an important topic.



### Asset alignment target (or portfolio coverage target)

Assessing the alignment of assets is a necessary step to better understand companies' material climate-related risks and opportunities, as well as the robustness of their climate transition plans. Using NZIF's alignment criteria has allowed Comgest to systematize alignment assessment across all invested companies.<sup>15</sup> To carry out this annual alignment assessment, Comgest uses publicly available sources such as SBTi and CA100+, as well as external data providers such as CDP and MSCI. The data points Comgest uses to assess each NZIF criteria are mapped out in Figure 3 below:

**Figure 3: Comgest assessment using NZIF definitions and criteria**

CRITERIA	NZIF DEFINITION	DATA POINTS USED IN THE ASSESSMENT OF THE CRITERIA <sup>16</sup>	
<b>Ambition</b>	A long term 2050 goal consistent with achieving global net zero	SBTi	Net zero target committed
		CA100+	1. Net Zero GHG emissions by 2050 (or sooner) ambition
		CDP	C4.2c regarding net-zero target(s)
		MSCI	Net zero target by 2050
<b>Targets</b>	Short- and medium-term emissions reduction target (Scope 1, 2 and material Scope 3)	SBTi	Near-term target set
		CA100+	3. Medium-term GHG reduction target 4. Short-term GHG reduction target
		CDP	C4.1a regarding absolute emissions target(s) C4.1b regarding emissions intensity target(s)
<b>Disclosure</b>	Disclosure of Scope 1, 2 and material Scope 3 emissions	CDP	C6.1 regarding Scope 1 emissions C6.3 regarding Scope 2 emissions C6.5 regarding Scope 3 emissions* *Assessment done for higher impact companies, notably checking disclosures of category 1 and 11 and category 15 for banks.
		MSCI	Scope 1 emissions reported Scope 2 emissions reported Scope 3 emissions upstream and downstream reported* *Assessment done for higher impact companies
<b>Decarbonization strategy</b>	A quantified plan setting out the measures that will be deployed to deliver GHG targets, proportions of revenues that are green and where relevant increases in green revenues	CA100+	5. Decarbonization strategy
		CDP*	C3.1 regarding 1.5 degrees C aligned transition plans C3.5 regarding spending/revenue aligned to 1.5 degrees C transition C4.5a regarding products/services classified as low carbon C3.3 regarding climate risks/opportunities and strategy C3.4 regarding climate risks/opportunities and financial planning
		Criteria assessed only for higher impact companies. *No direct mapping with CDP questions however the questions highlighted above can assist in assessing this criteria.	
<b>Capital allocation</b>	A clear demonstration that the capital expenditures of the company are consistent with achieving net zero emissions by 2050	CA100+	6. Capital allocation
		CDP*	C3.1 regarding 1.5 degrees C aligned transition plans C3.5 regarding spending/revenue aligned to 1.5 degrees C transition C4.2 regarding targets for R&D investments C9.6 regarding low carbon investments
		Criteria assessed only for higher impact companies. *No direct mapping with CDP questions however the questions highlighted above can assist in assessing this criteria.	

When setting its targets in 2023, Comgest concluded it did not have a robust enough methodology to assess the NZIF criteria relating to “Emissions performance”. Challenges included the fact that companies’ progress against targets is not necessarily linear, and that reporting on progress is limited due to a large portion of targets having been set only recently. Comgest decided to take a prudent approach and classify companies in the following three categories: “Aligning” toward a net zero pathway, “Committed to Aligning”, and “Not Aligned”. Consequently, Comgest’s first five-year target focuses on increasing the portion of AUM invested in Aligning companies from 35% in 2022 to 50% in 2027, notably through engagement. It is closely monitoring guidance development to assess emissions performance and will work on what data points allow it to best assess these criteria in the coming months.

As mentioned above, Comgest carries out this assessment on an annual basis, taking the following steps:

### **Step 1: Initial assessment**

A first assessment is carried out to determine the alignment of each investee company. The mapping table above forms the basis of an in-house tool to regroup all collected data and facilitate the assessment. The output of this assessment is compared to the previous year’s assessment and key elements of progress (or regression) are flagged (i.e., SBTi near-term target approved during the year).

### **Step 2: Assessment confirmation**

Each alignment assessment is then confirmed by the ESG Analyst and/or Company Analyst as Comgest recognizes that companies may

be disclosing information in addition to what is captured by the data sources cited above.

### **Step 3: Internal communication and reporting**

Investee companies’ alignment status is made available to Comgest investment teams on its in-house ESG dashboard, which helps the teams get an overarching view of a company’s climate profile. Additionally, this yearly update of alignment statuses allows Comgest to monitor and report on progress against its target. The share of its AUM invested in Aligning, Committed to Aligning, and Not Aligned companies is disclosed in its Annual Sustainability Report.

### **Concluding remarks**

Comgest is still at the start of its climate journey. Nevertheless, it has already experienced the benefits of having set these two climate targets. The target setting journey itself has been a great way to further train Comgest investment teams on assessing climate-related risks and opportunities, while establishing a standard set of metrics and analysis framework. The NZIF framework provides a common language across teams. It can be challenging to summarize a company’s profile in a limited number of assessment criteria. However, doing so allows Comgest to further formalize its assessment and focus on material issues. Narrowing its engagement efforts on companies representing the largest proportion of its financed emissions enhances Comgest’s approach of focusing on “quality” dialogue over “quantity” of engagement activities. Comgest expects to further refine its assessment of companies’ climate performance to be more detailed in its engagement asks and to contribute to improving companies’ climate alignment.

15 Comgest only invests approximately 20% of its listed equity AUM in higher impact companies. Higher impact companies represent companies on the Climate Action 100+ focus list; companies in high impact sectors consistent with Transition Pathway Initiative sectors; banks; and real estate. In contrast to the GFANZ four key transition finance strategies, which are intended to be pan-sector, globally applicable, and principles-based, NZIF provides more granularity to the specific use cases of Asset Managers and Asset Owners. For a mapping of NZIF’s framework against the GFANZ four key transition financing strategies, see page 15 of the GFANZ Secretariat [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#).

16 For each criterion, several data points have been mapped. Not all companies Comgest invests in are covered by each data point. Available data on one data point is sufficient to pass the corresponding criteria.

## 4. DAI-ICHI LIFE INSURANCE

**Sector:** Insurance (Asset Owner)

**HQ Geography:** Asia Pacific

**Firm Overview:** Dai-ichi Life is a large life insurance company in Japan and the core entity of Dai-ichi Life Group, a global life insurance group. Dai-ichi Life has a total of JPY 36 trillion on its stand-alone balance sheet at the end of March 2024.

In March 2021 Dai-ichi Life joined the Net Zero Asset Owner Alliance (NZAOA).

In its net-zero transition plan Dai-ichi Life disclosed its commitment to net-zero by 2050 and set its mid-term target for financed emissions by 2025 and 2030. Dai-ichi Life has a JPY 1 trillion investment target for climate related investments.

### STRATEGY

#### Dai-ichi Life Policy on Transition Finance

Dai-ichi Life has developed its “Policy on Transition Finance” (the TF policy) to support finance for real-economy companies to change their business models in support of decarbonization.

The TF policy defines the following four Transition Finance policies:

##### 1. Prioritize realization of long-term decarbonization in investment.

Real-economy companies across all sectors, including high-emitters, require transition financing for decarbonization efforts. Providing such companies with financing may temporarily increase financed emissions and may have a negative impact on the achievement of Dai-ichi Life’s mid-term decarbonization target.

Because Transition Finance is required for decarbonization, Dai-ichi Life will ensure it provides necessary Transition Finance, regardless of the impact of doing so on its achievement of its mid-term decarbonization target.

##### 2. Assess not only whether investee companies qualify under global and domestic transition finance guidelines, but also the validity and feasibility of investee companies’ transition strategies and investment returns.

When assessing potential opportunities for Transition Finance, Dai-ichi Life requires investee companies to satisfy the disclosure elements recommended in the “Climate Transition Finance Handbook” issued by the International Capital Market Association (ICMA). If an investee company is a Japanese company, Dai-ichi Life also expects it to meet the “Basic Guidelines on Climate Transition Finance” issued by the Ministry of Economy, Trade, and Industry of Japan. For assessment of investee companies’ transition strategies, Dai-ichi Life refers to globally trusted decarbonization pathways.

##### 3. Continuously review decision criteria used in examining companies’ transition strategies in light of the external environments surrounding the transition, technological innovations, and other regional and political considerations.

##### 4. Facilitate improvements in investee companies’ transition strategies and more effective initiatives through engagement based on the insights obtained through the detailed assessment of transition finance.

### Dai-ichi Life Transition Finance strategy

Dai-ichi Life is an asset owner and the main purpose of its investment is to cover claims payments of its long-term life insurance liabilities. A majority of its investee companies have not aligned with a 1.5 degrees C target. Dai-ichi Life's basic Transition Finance strategy is to finance real-economy companies in high-emitting sectors that are in the stage of Aligning or the In development category defined by the GFANZ four key transition financing strategies and to engage with them to support their net-zero transition. Dai-ichi Life tracks its investees' engagement performance through metrics and targets established in its net-zero transition plan.

As part of its investment decision-making process for Transition Finance, Dai-ichi Life assesses potential investee companies' decarbonization targets using net-zero pathways provided by pathway developers, such as the IEA and the NZAOA.

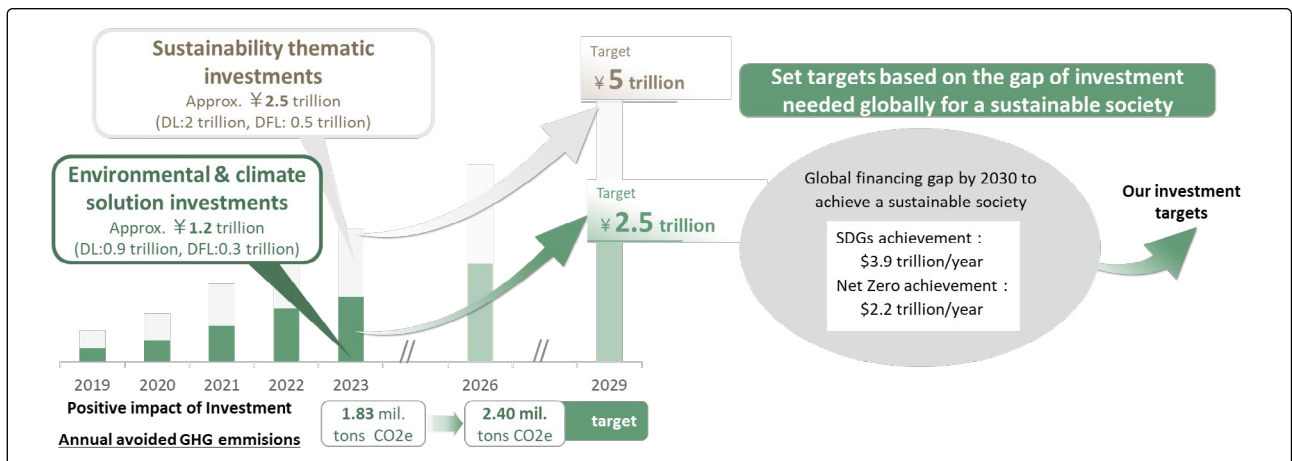
Dai-ichi Life evaluates maturity levels of investee companies' decarbonization using the Aligning criteria defined by the GFANZ four key transition financing strategies and other global frameworks;

it then engages with an investee company to enhance the company's level of alignment toward maturity. It also uses investee company engagement to inform investment risk management and to identify financing opportunities related to climate change.

Dai-ichi Life invests in Climate Solutions, including label bonds (e.g., green bonds), to contribute to decarbonization, and it sets a target amount of Climate Solution investment as part of Metrics and Targets in its net-zero transition plan. Dai-ichi Life and Dai-ichi Frontier Life, a subsidiary of Dai-ichi Life, set a cumulative target of JPY 5 trillion toward sustainability thematic investments by FY2029 and JPY 2.5 trillion of the JPY 5 trillion sustainability investments is toward Climate Solution investments. The JPY 5 trillion sustainability thematic investment target is defined based on global financing gap by 2030 to achieve a sustainable society and assets under management for Dai-ichi Life and Dai-ichi Frontier Life. By FY2023, Dai-ichi Life and Dai-ichi Frontier Life invested JPY 1.2 trillion. In its investment decision-making process regarding investments in Climate Solutions, Dai-ichi Life refers to the GFANZ four key transition financing strategies and other global frameworks such as EU taxonomies and more.

**Figure 4: Dai-ichi Life's achievements and targets of Sustainability and Environmental & Climate Solution investments**

This chart shows Dai-ichi Life's midterm target of investment amount and impact by sustainability thematic investments and environmental and climate solution investments.



Source: Dai-ichi Life Insurance

### How Dai-ichi Life’s engagement strategy supports its Transition Finance strategy

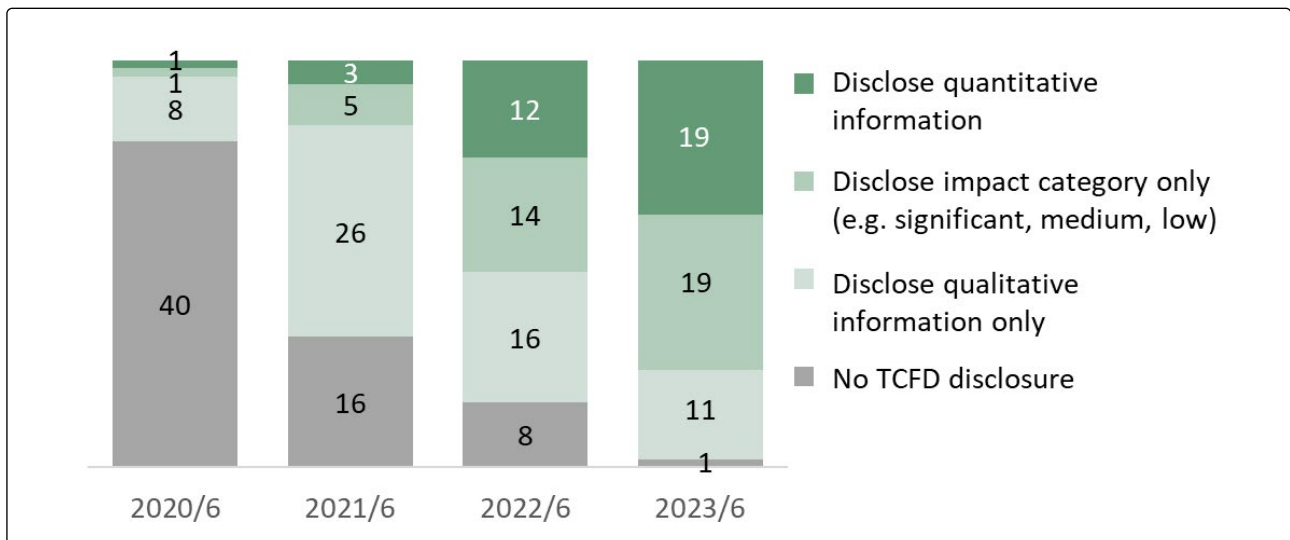
Since the top 50 highest GHG emitting investee companies account for the majority of Dai-ichi Life’s GHG emissions from equity, bond, loan, and real estate investments, focusing on engagement with the top 50 investee companies allows Dai-ichi Life to contribute to decarbonization effectively and efficiently. In FY2022, for example, Dai-ichi Life engaged with 55 investee companies; these companies accounted for 72% of Dai-ichi Life’s GHG emissions coming from equity, bond, loan, and real-estate investments.

Through engagement, Dai-ichi Life aims to understand investees’ decarbonization and net-zero transition plans and it provides the opportunity to discuss with investees the validity and feasibility

of their plan. These discussions help to enhance climate related risk management of investee companies and allow Dai-ichi to identify additional transition financing opportunities. As net-zero pathways vary across industries, Dai-ichi Life maintains dialogue with investee companies based on sectoral net-zero pathways provided by the IEA, the NZAOA, and the scale and development of decarbonization technologies. When Dai-ichi Life identifies issues about an investee company’s net-zero target and/or strategy, Dai-ichi discusses the issues with the investee company and then monitors how the investee company addresses the issues. In addition, when Dai-ichi Life identifies transition financing needs of investee companies, it internally discusses and makes a decision regarding whether to issue labeled bonds to support the investee’s net-zero transition.

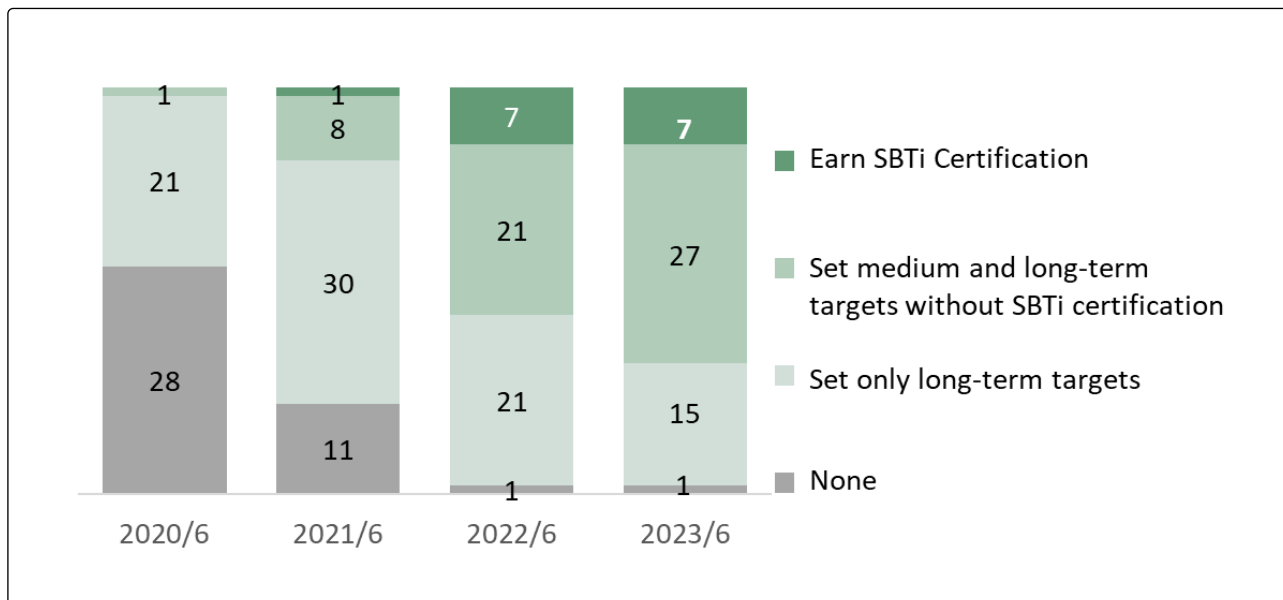
**Figure 5: Breakdown of Dai-ichi Life’s top 50 GHG emissions investee-companies by TCFD scenario analysis disclosure**

This figure presents the progress of TCFD disclosure of Dai-ichi Life’s top 50 GHG emissions investee-companies. The number of the top 50 companies that implement TCFD disclosure has been expanding.



**Figure 6: Breakdown of Dai-ichi Life’s top 50 GHG emissions investee-companies by GHG reduction target**

This figure shows the progress of GHG reduction target setting by Dai-ichi Life’s top 50 GHG emissions investee-companies. The number of companies that set its GHG reduction targets has been increasing.



**REAL-ECONOMY TRANSACTION**

**Aligning**

**Engagement with an Aligning Company in practice**

The following is an example of Dai-ichi Life’s engagement practices with Company A, one of its investee companies.

**Company A**

*(the company name has been withheld because it has not been disclosed in a public document)*

**Sector:** Railway Industry—Company A has multiple business lines; in FY 2022, the railway business accounted for majority of Company A’s revenue.

**HQ Geography and Key Markets:** Company A is headquartered in Japan and its key market is the Japanese market.

**Nature of relationship/influence/degree of association with the real-economy client or portfolio company:**

Dai-ichi Life invests in bonds and equity and lends to Company A. Dai-ichi Life has been engaging with Company A about its decarbonization since 2018.

**Company Overview:** Company A’s main businesses are railway, retail/service, and real estate/hotel. Company A set a transition plan to net-zero and has committed to reduce by 2030 its emissions by 50% of those of 2013 and to net-zero by 2050.

Dai-ichi Life has been engaging with Company A since 2018 as a shareholder and bondholder.

Through its engagement with Company A, Dai-ichi Life has developed an understanding of the significance of climate change on Company A and it has discussed Company A’s GHG emissions measurements on a group basis, as well as Company A’s decarbonization target setting,

detailed plans to achieve the target, and monitoring of its progress toward decarbonization.

Company A adapted the recommendations of the TCFD and disclosed the assessment of its climate transition risk and climate physical risk for its railway business. In addition, Company A set out its net-zero transition plan and has committed to reducing its CO<sub>2</sub> emissions from its railway business by 50% by 2030 compared to 2013 and committed to achieving net-zero CO<sub>2</sub> emissions by 2050.

Company A projected its GHG emissions from its non-rail businesses as well. Dai-ichi Life has engaged with Company A to discuss its GHG emissions calculation, decarbonization target setting, detailed transition plan, and its disclosures related to its overall business. Through engagement with Dai-ichi Life, Company A developed and disclosed its overall business decarbonization target and detailed road map. In assessing Company A's transition progress, Dai-ichi Life uses Company A's actual GHG emissions as a key indicator to assess its transition progress.

As described above, climate disclosure and target setting for Company A has been ongoing and progressing well against established targets. Company A has been able to drive substantial decarbonization progress and climate risk identification based on TCFD recommendations.

### **Assessment of investee companies' decarbonization transition plan**

According to Company A's decarbonization transition plan, Company A plans to transition from fossil fuel energy to renewable energy and mono-hydrogen firing energy. According to the "Transition Roadmap for Power Sector" issued by the Ministry of Economy, Trade, and Industry Japan, it is projected that mono-hydrogen firing energy technology will be available after 2030 and commercialization requires more

than 10 years. Dai-ichi Life continues its dialogue with Company A about its energy transition. As an asset owner, Dai-ichi Life has identified a challenge in the feasibility assessment of Company A's decarbonization transition plan.

Decarbonization plans are a long-term plan toward 2050. Some investee companies incorporate undeveloped decarbonization technologies in their transition plans, even if they are not confident about the feasibility of the technologies coming online.

Though feasibility assessment of technologies in investee companies' transition plans is possible, to some extent, using capex plans and other information, to enhance 2050 net-zero targets should be considered.

### **Lessons learned**

#### **Engagement with investee companies**

Dai-ichi Life joins collaborative engagements arranged by Climate Action 100+, the Life Insurance Association of Japan, etc. Furthermore, when Dai-ichi Life invests in equity and bonds issued by the same investee company, Dai-ichi Life conducts integrated engagement as a shareholder and bondholder by occasion.

Through engagement, Dai-ichi Life supports investee companies' net-zero transitions. Engagement helps enhance climate related risk management of investee companies and allows Dai-ichi to identify transition financing opportunities. Regarding climate related risk management, as a result of strategic engagement, some investee companies make progress toward measuring GHG emissions and developing and disclosing net-zero transition plans. With regard to identifying opportunities, Dai-ichi Life identifies transition financing needs of investee companies, such as the need for issuing labeled bonds.

To contribute to further decarbonization, engagement effectiveness should be enhanced.

Dai-ichi Life identifies the following ways to improve effectiveness of its engagements:

- Tailor engagement approaches based on the nature of an investee company, the industry which the investee company belongs to, and the regional socio-economic conditions where the investee company manages business; and
- Participate in collaborative engagements, ensuring individual investors' views are reflected in the engagement.

Furthermore, the number of financial institutions that engage with investee companies regarding climate change has been increasing and real-economy companies are required to have more resources to facilitate engagement with financial institutions. To use limited resources wisely, the engagement approach and engagement issue monitoring approach should be enhanced.

### **Climate Solution investment**

To increase Climate Solution investment and to further enhance decarbonization, Dai-ichi Life believes it is useful to:

- Monitor decarbonization progress of investee companies based on their net-zero transition plans using actual GHG emissions, avoided emissions, etc.; and
- Apply the GFANZ four key financing strategies and other global frameworks to enhance its investment decision-making.

### **Undeveloped innovative decarbonization technologies**

Innovative decarbonization technologies that have not yet been developed are required. Dai-ichi Life recognizes that the feasibility of these innovative technologies is uncertain and this uncertainty brings significant practical challenges in the decision-making process. For instance, hydrogen-based steelmaking technology is expected to provide massive decreases in GHG emissions in

steel manufacturing. However, the feasibility of the technology is highly uncertain because of technical challenges and concerns over sufficiency of hydrogen supplies, etc. Some say that, because electric furnace steelmaking has already been developed, steel manufacturers should invest in such furnaces rather than in hydrogen-based steelmaking technology.

Though asset owners generally have a deep understanding of the industry trends related to investee companies, asset owners are not decarbonization technology specialists. As an asset owner, Dai-ichi Life has challenges around feasibility assessment of undeveloped innovative decarbonization technologies. Therefore, further understanding of — and detailed research related to — these technologies is required. It is also expected that governments and international institutions support capacity building of financial institutions.

### **Regional differences and the importance of policy**

While net-zero is a globally common target, decarbonization pathways are different across regions and countries. For example, NZE scenarios provided by the IEA define different decarbonization levels by developed countries and developing countries. Therefore, financial institutions should consider local conditions in their investment decision-making processes.

Regional conditions should also be considered with respect to transition finance. For example, renewable energy is an evolving investment field. In Europe, renewable energy and the electric grid system have been widely implemented. Asian countries, on the other hand, still rely on fossil fuel electricity generation and the grid system is still vulnerable. Therefore, financial institutions may want to apply different investment decision criteria for renewable energy investment opportunities in Europe and Asia. Currently, regional and country-specific net-zero pathways are very limited and this



creates challenges for investment decision-makers. Therefore, policy engagement with global pathway developers (e.g., the IEA) and governments is needed to encourage them to develop regional and country specific net-zero pathways.

### **Development of GHG reduction targets including scope 3**

Scope 3 includes GHG emissions from the value chain of investee companies and, for some industries, Scope 3 emissions account for a significant amount of total GHG emissions. In the case of Company A, for example, Scope 3 should be in-scope for GHG emission measurement and with respect to its decarbonization target.

However, investee companies often hesitate to include Scope 3 within their GHG emission measurement and decarbonization targets because of the following challenges:

- The Scope 3 boundary is not clear in practice and Scope 3 measurement requires huge resources within an investee company's value chain.
- Investee companies do not necessarily have strong influence over companies in their value chain and they struggle to ask companies in their value chain to provide GHG measurements and decarbonization targets. Once investee companies set their decarbonization targets to include Scope 3, the investee companies are responsible for GHG emission reduction.

### **BOX 7. GFANZ APAC — CATALYZING CLIMATE ACTION: EMERGENT ASIA-PACIFIC CASE STUDIES OF FINANCIAL INSTITUTIONS' NET-ZERO TRANSITION PLANS**

The GFANZ Asia-Pacific (APAC) Network published [Catalyzing Climate Action: Emergent Asia-Pacific Case Studies of Financial Institutions' Net-zero Transition Plans](#), July 2024, which aims to contextualize the various themes, components, and recommendations of the GFANZ Financial Institution Net-zero Transition Plans framework.

Building on the [2023 inaugural case study report](#) that featured components of Asia-Pacific financial institutions' net-zero transition plans, this iteration features end-to-end transition plans and the evolution of practices across the region. The nine case studies demonstrate how some of the leading financial institutions in the region are developing and implementing their transition plans to accelerate their financing of Asia's transition, with each case study providing a deeper dive into one or more components within a theme. The case studies also reference the four key transition financing strategies (as set out in the GFANZ framework) and showcase the use of Transition Finance frameworks and policies to direct capital allocation.

## 5. THE SWEDISH EXPORT CREDIT AGENCY (EKN)

**Sector:** Export Credit Agency

**HQ Geography:** Sweden

**Firm Overview:** The Swedish Export Credit Agency, Exportkreditnämnden (EKN), is a state authority with the task of promoting exports and developing the internationalization of Swedish business and industry. EKN offers guarantees for payments and financing in export transactions. Svensk Exportkredit (SEK), the Swedish Export Credit Corporation, provides long-term funding for Swedish export-related transactions. Together EKN and SEK form the Swedish government-backed export credit system.

Since 1933 EKN has insured payments and shared risk with exporting companies and banks. EKN works with large global companies as well as small companies and guarantees their export businesses to more than 140 countries.

The Swedish government has required EKN to transition its operations and guarantee its portfolio to be in line with the goals of the Paris Agreement 1.5 degrees C target and to avoid creating a lock-in fossil fuel dependence.

EKN has set a long-term climate target of reaching net-zero emissions by 2045. Interim targets and activities to reduce GHG emissions from the guarantee portfolio will be set as part of its membership in Net-Zero Export Credit Agencies Alliance (NZECA).

EKN has ended new support for fossil-related activities, except in limited and defined circumstances, that are consistent with the goals of the Paris Agreement. It has launched new products and offerings to support and scale-up financing of climate solutions.

EKN's and SEK's scientific climate council, a group of academic experts, provides advisory support to assist aligning the Swedish export finance system with the Paris Agreement 1.5 degrees C goal.

### STRATEGY

#### EKN Approach to Transition Finance

As the urgency of addressing climate change heightens, financial institutions, including export credit agencies (ECAs), are increasingly called upon to actively contribute to the objectives set forth in the Paris Agreement. Exportkreditnämnden (EKN) and Svensk Exportkredit (SEK) have committed to measuring and reducing the carbon footprint of their portfolios to align with the Paris Agreement 1.5 degrees C target.

In line with the GFANZ four key transition financing strategies, EKN and SEK are implementing a methodological framework to assess the alignment of export transactions with the goals outlined in the Paris Agreement. The “Paris Alignment Methodology” was developed by RINA Consulting S.p.A. on behalf of EKN and SEK after collaborative discussions with EKN and SEK teams. The methodology's scope encompasses the complete range of financial instruments EKN and SEK have at their disposal to facilitate and promote Swedish exports.

There are two steps to the Paris Alignment Methodology. Step 1 is an assessment of climate

change mitigation alignment. This step involves evaluating criteria such as: alignment with the EU Taxonomy; GHG emissions intensity compatibility with the 1.5 degrees C pathway; the adoption of credible transition plans; and the assessment of carbon lock-in risk. Step 2 involves assessment of climate change adaptation alignment, underscoring the importance of evaluating transaction alignment with climate adaptation goals. This step considers factors such as climate risk assessments and management processes.

Based on climate change mitigation (Step 1) and climate adaptation (Step 2) results, under the Paris Alignment Methodology transactions are classified into five categories based on their alignment status:

1. **Achieving Net Zero** where the transaction currently exhibits an emissions intensity performance that is already close to net zero, and adaptation criteria are met;
2. **Aligned to a Net Zero pathway** where the transaction currently exhibits emissions intensity values aligned with a 1.5 degrees C pathway, provided adaptation criteria are met;

3. **Aligning towards a Net Zero pathway** where emissions intensity indicators are not aligned to a 1.5 degrees C pathway, but a credible transition plan is adopted, provided adaptation criteria are met;
4. **Not aligned** where mitigation and/or adaptation criteria are not met; and
5. **Not classified** (i.e., no data).

The classifications are in line with the transition financing strategies developed by GFANZ. The “Achieving Net Zero” category corresponds to GFANZ’s Climate Solutions strategy, which includes renewable energy, batteries, electric vehicles, and smart grid infrastructure. Like the GFANZ framework, both “Aligned to a Net Zero pathway” and “Aligning towards a Net Zero pathway” entities should have a net-zero transition plan but are at different stages of development and implementation. The “Aligned to a Net Zero pathway” strategy includes entities that are on track – and demonstrate actual alignment to – pathways, whereas “Aligning towards a Net Zero pathway” entities are making progress and are converging toward net-zero.

**Figure 7: Climate mitigation and climate adaptation assessment matrix**

Step 3 - Final Transaction Class Assignment Matrix				
		Climate adaptation assessment outcome		
		Aligned	Not aligned	
Climate mitigation assessment outcome	Achieving Net Zero	Achieving Net Zero	Not aligned	Final transaction class
	Aligned to a Net Zero pathway	Aligned to a Net Zero pathway	Not aligned	
	Aligning towards a Net Zero pathway	Aligning towards a Net Zero pathway	Not aligned	
	Not aligned	Not aligned	Not aligned	
	No data	No data	No data	

Source: The Swedish Export Credit Agency

The assessment of climate change mitigation alignment (Step 1) first looks at the EU Taxonomy and 1.5 degrees C alignment. If a project/activity is aligned with the EU Taxonomy or it currently has carbon emissions intensity performance close to net-zero emissions (considering sectoral 2050 emissions intensity indicators aligned to 1.5 degrees C), the transaction is classified as Achieving Net Zero for the climate mitigation assessment.

Otherwise, the transaction is subjected to a further analysis, which looks at whether the carbon emissions intensity of an activity/project is compatible with the 1.5 degrees C pathway. If so, it is classified as “Aligned to a Net Zero Pathway”, provided there is not a high risk of carbon lock-in as a result of the activity/project and a credible climate transition plan has been adopted. In cases where there is a high risk of carbon lock-in, or no credible transition plan has been adopted, the transaction will be considered “Not Aligned” for the climate mitigation assessment.

If the carbon emissions intensity of an activity/project is incompatible with the 1.5-degree C pathway, the transaction is classified as “Aligning towards a Net Zero Pathway”, provided it does not carry a high risk of carbon lock-in and there is a credible climate transition plan. In cases where there is a high risk of carbon lock-in, the transaction will be considered “Not Aligned” for the climate mitigation assessment.

If the scope of the activity is unclear, or emissions intensity data are unavailable (when required), the transaction will be considered No data. In all other cases, the transaction will be classified as “Not aligned” for the climate mitigation assessment.

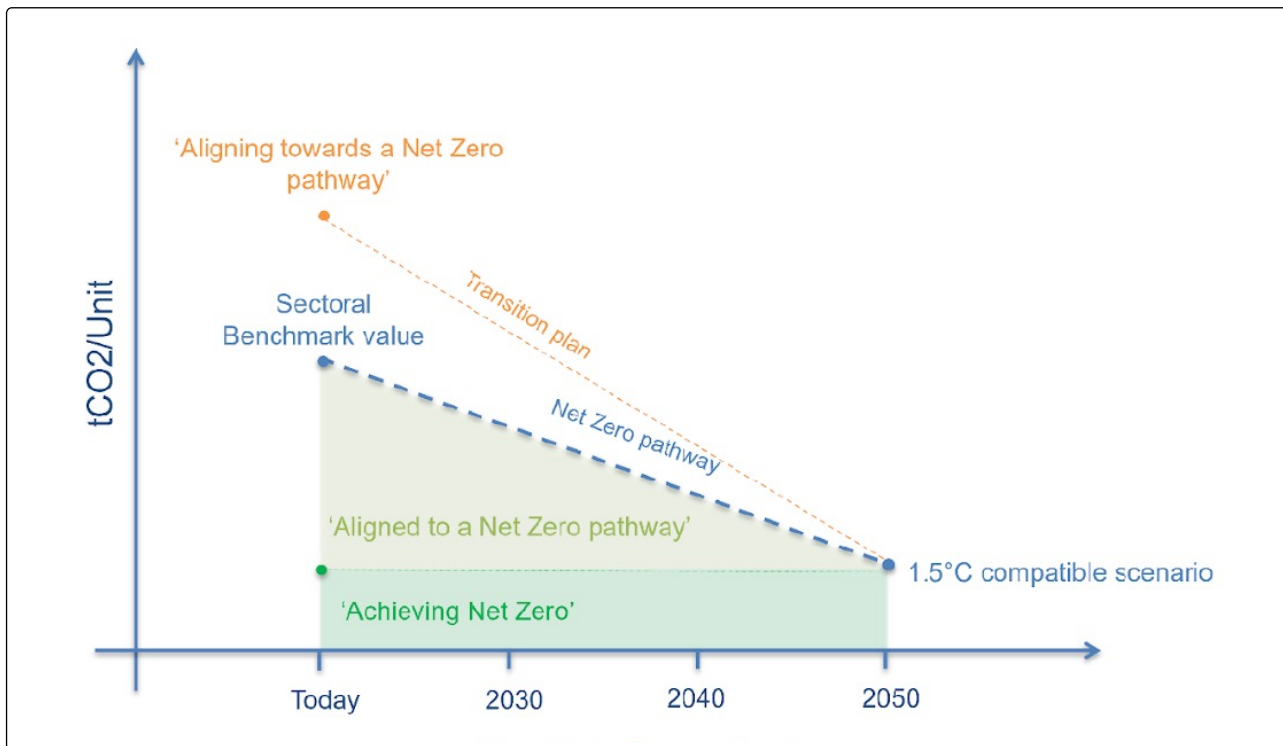
For an activity/project to be considered “Aligned to a Net Zero pathway” or “Aligning towards a Net Zero pathway”, the credibility of the transition plan is assessed. The assessment involves checking the disclosure of indicators and criteria related to: governance; calculation of GHG emissions; absolute and intensity emissions targets; strategy; and monitoring mechanisms.

The EKN transition plan assessment focuses on similar attributes that GFANZ has identified for its Aligned and Aligning strategies, such as a net zero commitment and short- to medium-term targets set to a pathway, and consideration of performance against, or progress toward, established targets.

The assessment on climate adaptation (Step 2) is based on evaluation of climate risks identification and assessment of physical climate risk. If the project/activity has undergone a comprehensive analysis to identify and evaluate potential physical climate risks and where material climate risks are identified, establishing meaningful measures aimed at reducing these risks and enhancing resilience, the project/activity is classified as “Aligned”, otherwise “Not aligned” for the climate adaptation assessment.

The combination of the climate mitigation (Step 1) and climate adaptation assessment (Step 2) provides the final outcome of alignment related to the transaction as per the assessment matrix (Figure 7).

**Figure 8: Transaction classes (pathways)**



Source: The Swedish Export Credit Agency

### Implementation progress and next steps

The Paris Alignment Methodology was developed in 2023 and was implemented as a pilot in early 2024. The pilot was used to assess larger and long-term export credit transactions, as these are the ones with highest risk of negative impacts related to environmental or social factors. As EKN and SEK gain experience with the methodology, the process will be adjusted and updated in line with market practices.

Implementing the methodology brings with it additional information and reporting requirements for the exporters and banks that are applying for export credit guarantees. The application form will require information related to greenhouse gas emissions, EU Taxonomy alignment, transition plans, and climate change risk assessment. During the development and implementation phase, EKN and SEK have had discussions with Swedish

exporting companies to inform and prepare them for these additional requirements. Ongoing discussions with exporters, and their banks, have also provided insights regarding different approaches to Transition Finance, such as sector-specific technical details; intensity targets; and how to deal with the fact that the EU taxonomy does not cover certain activities.

As of today, EKN only measures and provides incentives for transactions that are aligned to the EU Taxonomy. The Paris Alignment Methodology provides a way of measuring transactions that are aligning or transitioning toward net zero, and eventually it will allow EKN to incentivize those transactions as well.

The Paris Alignment Methodology is not intended as a way of rejecting transactions. EKN can potentially still support transactions that are classified as “Not aligned”. For example, EKN has

a sustainability policy that clarifies its restrictive approach to transactions that relate to fossil fuels.<sup>17</sup> Like GFANZ's Managed Phaseout strategy, the focus of the sustainability policy is the planned and accelerated retirement of high-emitting assets. EKN does not issue new guarantees for specific sectors or activities related to fossil fuels, except for projects or operations that have documented, realistic transition plans in line with the Paris Agreement 1.5 degrees C target. The Paris Alignment Methodology gives EKN a structured and rigorous way of assessing transition plans. The transition plan assessment follows the same key themes as in the GFANZ Net-Zero Transition Plan (NZTP) framework, focusing on strategies to align activities, targets to assess progress, and governance to support implementation.

EKN is in the process of adopting interim climate targets for its guarantee portfolio up to 2045. To this end — and to set the baseline — the portfolio as of 31 December 2022 was analyzed using

the Paris Alignment Methodology. The analysis provided valuable insights regarding the strengths and weaknesses of the portfolio in terms of its climate impact. The analysis also demonstrated the importance, and sometimes difficulties, of collecting the data necessary to carry out the analysis. The lack of science-based pathways for some sectors in the portfolio made it difficult to classify transactions as aligned to a net zero pathway. Greater emphasis was, therefore, put on assessing whether transition plans are aligning toward a net zero pathway or not.

The next step for EKN is to start calculating the GHG emissions attributable to the guarantee portfolio. The portfolio emissions calculation and the Paris Alignment Methodology are meant to complement each other and to make it possible to measure and reduce the carbon footprint of the portfolio so that it aligns with the Paris Agreement 1.5 degrees C target.

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17 EKN. [Sustainability Policy](#), 2023.

## 6. LBP AM

**Sector:** Asset Manager

**HQ Geography:** France (Europe)

**Firm Overview:** LBP AM is a leading asset manager in France and in Europe. It manages listed assets and real private assets.

As a signatory to the Net Zero Asset Managers initiative (NZAMI), in May 2022 LBP AM disclosed its target of having 80% of its assets under management (AUM) establish decarbonization targets by 2030. The target 80% of total AUM corresponds to the target of 90% LBP AM applies to “required and operational activities” as defined by Financial Sector Science-Based Target Guidance.

### STRATEGY

In 2022 LBP AM’s Corporate Private Debt and SRI Solutions team created a fund that is classified as Article 9 per the Sustainable Finance Disclosure Regulation (SFDR regulation).<sup>18</sup> The fund — Midcap Senior Debt (MSD) — aims to contribute to the decarbonization of companies’ business models by implementing sustainability-linked loans (SLL). Because the margin impact is tied to achieving annual CO<sub>2</sub> emissions reduction targets, the SLLs qualify as an Aligning transition financing strategy.

The fund invested in a transaction carried out as part of Project Raya. The proceeds of the SLL were used for both general purpose and for financing of capex that aligns to a decarbonization pathway.

### REAL-ECONOMY TRANSACTION

#### Aligning

### Project Raya

**Sector:** Agriculture

**HQ Geography:** Europe (headquartered in northeastern France)

**Form of Finance/Type of Transaction:** Sustainability Linked Loan

Project Raya is a French agro-industrial cooperative composed of 2,000 employees and 9,000 farmers. It grows sugar beets from which it manufactures sugar (it is the #1 supplier of sugar for the French food and sector); rectified alcohol (it is the #1 manufacturer of such alcohol in Europe); and bioethanol (it is the #3 manufacturer of bioethanol in Europe) at 13 production sites. In 2023, the cooperative generated revenues of more than EUR 2 billion. Approximately 50% of its revenues are generated in France, 40% in Europe, and 10% in the rest of the world.

As part of LBP AM’s investment process, the cooperative’s ESG practices have been analyzed using the in-house scoring framework: “GREaT”. The framework assesses a company’s or project’s practices across four dimensions: responsible Governance; sustainable management of Resources; Energy transition; and development of Territories. When reviewing the cooperative’s energy transition pillar, LBP AM’s ESG due diligence demonstrated that the cooperative had effectively identified relevant climate-related risks. The cooperative’s transition plan to manage climate-related risks was based on a comprehensive policy driven by ambitious GHG emission reduction targets and extensive measures, e.g., ISO 50001 certification of production sites; heat recovery from industrial processes; on-site electricity production and consumption.

<sup>18</sup> EU. [Sustainability-related disclosure in the financial services sector](#).

The cooperative had also assessed its exposure to climate-related physical risks and, while threats related to water scarcity (i.e., droughts) were the most salient, it appeared the cooperative had implemented satisfactory measures to mitigate such scarcity. Indeed, because 75% of a sugar beet is water, the cooperative had started to deploy industrial processes to recover the water from the sugar beet manufacturing process, which would allow the cooperative to be water-autonomous by 2025. In other words, by that date, the cooperative's plants would be able to function in a closed loop, using the water recovered from the sugar beet manufacturing processes to irrigate its beet fields. The cooperative has also set the target of completely eliminating water extraction from natural sources at its industrial sites by 2030, as well as increasing the share of its organic sugar beets production.

In light of this advanced maturity in managing climate-related risks, LBP AM and the cooperative defined a number of sustainable performance targets (SPTs), which included a carbon intensity-based KPI calculated as total Scope 1 emissions (in tons of CO<sub>2</sub>) divided by total production of sugar beets (in tons) with a yearly average decarbonization rate amounting to about 6%. Besides the GHG target, two other SPTs were set up for the loan with respect to cutting water consumption and growing organic agricultural surfaces.

The cooperative reports annually on the achievement of SPTs and provides a certificate audited by an independent third party to ensure the robustness of the SLL; therefore, access to data will not be an issue when tracking the effectiveness of the implementation of the transition plan.

The cooperative's bioethanol manufacturing activity can be classified as a Climate Solution because using such fuel significantly reduces emissions. By comparison to fossil fuel, bioethanol manufacturing activity results in 60-95% less emissions. The cooperative's production sites are all certified against the B2SV voluntary scheme that ensures compliance with European Commission criteria for sustainable

biofuel defined by the RED II. Hence, the associated general corporate financing provided by LBP AM also fits within a Climate Solution financing strategy.

Moreover, the cooperative is committed to transitioning in line with a 1.5 degrees C aligned pathway: its target GHG reduction of 23% (Scopes 1 and 2) by 2030 versus 2019 emissions was validated by the SBTi in May 2023 as being consistent with a well below 2 degrees C GHG reduction pathway. To achieve the target, the cooperative has defined a transition plan under which it intends to: 1) increase the share of renewable energy (i.e., solar photovoltaic and bioenergy) it produces and consumes on-site, and 2) increase energy efficiency, with a strong focus on heat recovery from its industrial processes.

LBP AM's SSL financing aims to address decarbonization within the real economy both directly and indirectly:

1. **Aligning activities (direct based on SLL exposure):** by incentivizing and supporting the transition plan of an agro-industrial company that has set up GHG targets on a well below 2 degrees C pathway, LBP AM has helped improve energy efficiency throughout the manufacturing processes and has grown the share of renewable energies in its energy mix; and
2. **Climate Solutions (indirect via LBP AM's products and services):** by financing a company that produces sustainable biofuels.

LBP AM's due diligence demonstrated that the cooperative implemented satisfactory practices to manage its sustainability-related risks and opportunities. LBP AM had access to qualitative data regarding the cooperative's policies, measures, and performance indicators, which made LBP AM's assessment of the cooperative's maturity more precise. LBP AM's involvement in Project Raya is an example of how LBP AM managed to execute on its sustainable investment strategy as this case sits at the crossroads of climate change mitigation, circular economy, and water preservation.



## 7. LLOYDS BANKING GROUP

**Sector:** Banking & Insurance, Pensions & Investments

**HQ Geography:** London/Europe

**Firm Overview:** Lloyds Banking Group (the Group) is the UK's largest financial services provider with more than 27 million customers.

The Group supports practically every sector of the UK economy, and serves millions of people and businesses every day. Its lending, investments, products, and services are powerful drivers of creating a sustainable and inclusive future for all, as well as enabling the Group to grow profitably with its customers.

The Group includes three main divisions: Retail; Insurance, Pensions and Investments; and Commercial Banking. Its banking activity is limited to its Retail and Commercial Banking operations. Scottish Widows relates to its Insurance, Pensions and Investment activities.

The Group is a founding member of the Net Zero Banking Alliance (NZBA) and has set several ambitions across its own operations, supply chain, lending, and investments to support the decarbonization of its business in line with limiting global warming to 1.5 degrees C. The Group's ambitions include:

- Reducing the carbon emissions it finances by more than 50% by 2030
- Halving the carbon footprint of its investments by 2030
- Achieving net zero operations by 2030 and reducing its direct carbon emissions by at least 90%
- Reducing supply chain emissions by 50% by 2030
- 10 NZBA sectors targets related to its banking financed emissions.

### STRATEGY

#### LLOYDS BANKING GROUP ENVIRONMENTAL STRATEGY

##### Systems approach to environmental strategy

The Group has taken a systems-led approach to consider climate and environmental issues across and between each system in a UK and Group context.

The Group seeks to de-risk its business and capitalize on opportunities. Through the work it has undertaken in developing Net Zero Banking Alliance (NZBA)-aligned sector targets, its first transition plan and considering the opportunities available to support its customers, the need to

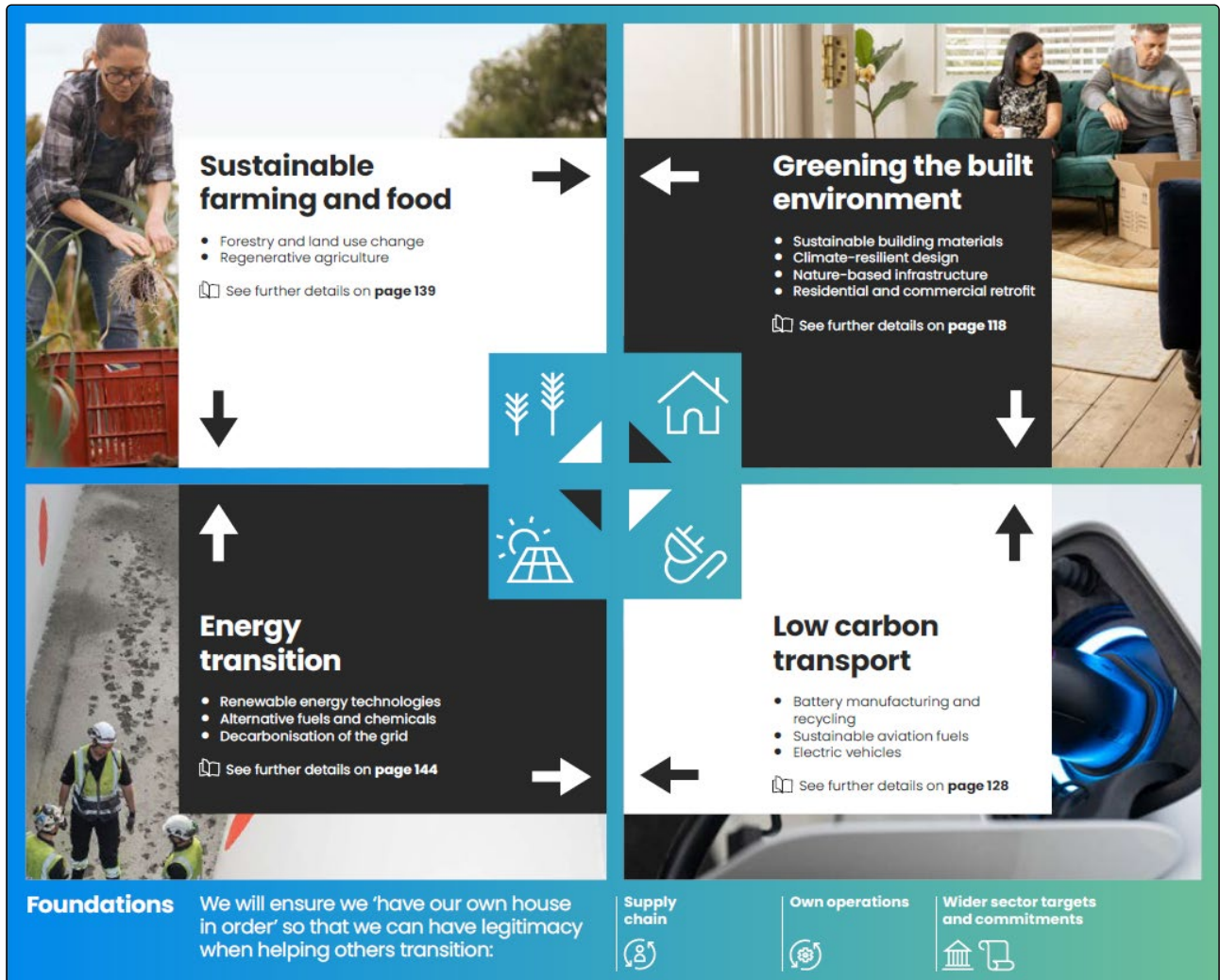
move from a sector focus to a system-led approach became clear.

By taking a system-led approach, the Group's strategy seeks to bring focus through greater cross-Group collaboration, and in turn, aims to unlock change and progress. The Group has four priority systems it where believes it can leverage its scale, reach in the market and different financial services offered to consider climate and environmental issues across and between each system.

The systems are focused on greening the built environment; low carbon transport; sustainable farming and food; and an energy transition fundamental to broader decarbonization.

Systems are interconnected, with progress in one also supporting progress in the other, particularly in the energy transition. As such, different areas of the Group will need to collaborate to support different elements across each system. This approach will support focusing on the most material areas that the Group can play a role in to generate new lending or investment opportunities, or to manage its risks.

**Figure 9: Systems approach**



Source: Lloyds Banking Group 2023 Sustainability Report

**The Group's emissions reductions ambitions and targets**

The Group has set several ambitions across its own operations, supply chain, lending, and investments to support the decarbonization of its business in line with limiting global warming to 1.5 degrees C.

While it is making progress on all ambitions, there are significant challenges and external dependencies in many of its sectors and systems that will need to be addressed for it to achieve its targets and overall ambition to reduce the emissions it finances by more than 50% by 2030.

## Credible transition plan assessments

One of the key ways the Group engages corporate clients on the transition is through assessing the credibility of clients' transition plans.

During 2023, it enhanced its methodology for assessing the credibility of its clients' net zero transition plans. Its approach to credible transition plans (CTPs) supports it in delivering on its sector decarbonization targets, to drive real economy impact.

The Group's approach to assessing transition plans:

- Is aligned with the work of the Transition Plan Taskforce's sector-neutral disclosure framework published in October 2023 and will evolve to include sector-specific guidance that has been finalized in 2024.
- Draws on existing public frameworks (including Climate Action 100+ and the Transition Pathway Initiative) that assess where clients are on their transition journey.
- Establishes baseline requirements for its clients, which increase in expectations in 2025 and 2027. Baseline requirements will be subject to an annual ratcheting mechanism and review to include latest developing standards and guidance.
- Is sector-neutral but also includes sector-specific considerations (e.g., the Institutional Investors Group on Climate Change's (IIGCC's) net zero standard for oil and gas)<sup>19</sup> as it rolls out its approach into other high carbon sectors.
- Sets a higher bar initially for larger corporates, recognizing that smaller companies will need more time to develop their plans, and aligned with the Transition Plan Taskforce's principle that the size and scale of companies will be a crucial consideration for transition planning.

- Prioritizes CTP engagements for material companies in scope of its published targets, and it continues to review and re-prioritize engagements, where needed, to ensure it is targeting actions where it will have the most real economy impact.
- Is being embedded into its business processes and decision making during 2023 and 2024.

The Group assesses its clients against five sub-elements of emissions targets, business model, investments, actual emissions and governance, in line with the Transition Plan Taskforce's three core principles of ambition, action and accountability.<sup>20</sup>

## Financing transition technologies

In addition to assessing client's transition plans, the Group is also focused on financing transition technologies. By financing and enabling growth in transition technology utilization across the UK, it will help support its clients' transition plans, which in turn will be key to contributing to the Group's sector-specific carbon reduction targets and a real economy transition.

During 2023, the Group mobilized a program of work (net zero origination) to advance finance for upscaling the most commercially viable solutions. It identified and assessed 85 technologies spanning every sector of the UK economy and prioritized these in line with UK Climate Change Committee (CCC) scenarios; UK Government Net Zero & Green Finance Strategy; and market projections and supporting data analytics. It continues to enhance its internal capabilities to better consider emerging technologies, leveraging the International Energy Agency's Clean Energy Technology Guide<sup>21</sup> and Technologies Readiness Scale. The Group is focusing on eight emerging commercially viable technologies, with examples including carbon capture, storage, and utilization (CCUS); batteries; low carbon heating; and EV charging and infrastructure.<sup>22</sup>

<sup>19</sup> [Net Zero Standard for Oil & Gas \(iigcc.org\)](https://www.iigcc.org/).

<sup>20</sup> Details on the criteria and process for assessment, monitoring, and escalation is included in the 2023 Sustainability Report (pg. 116).

<sup>21</sup> [ETP Clean Energy Technology Guide Data Tools IEA](https://www.iea.org/clean-energy-technology-guide)

<sup>22</sup> More detail on Lloyds Banking Group's overall environmental sustainability strategy can be found in the [2023 Lloyds Banking Group Sustainability Report](#).

REAL-ECONOMY TRANSACTION

Climate Solutions

Aligning

**Bruntwood SciTech**

**Sector:** Commercial property development, focusing on city-wide innovation ecosystems

**HQ Geography:** UK

**Form of Finance/Type of Transaction:** Sustainability Linked Loan

**Amount of Capital Committed and/or Deployed:** GBP 380 million sustainability linked

**Investment Horizon/Duration/Contract Period:** 3 years

Bruntwood SciTech is the country’s leading developer of city-wide innovation ecosystems and the largest dedicated property platform for the UK knowledge economy. With a 50-year track record in the property industry, Bruntwood SciTech brings a wealth of experience in creating and developing strategic partnerships with UK regional cities, universities and NHS Trusts.

Offering premium office and lab space, a range of scientific services, and specialist business support, Bruntwood SciTech helps companies — particularly those in the science and technology sectors — to form, scale and grow.

A joint venture between Bruntwood, Legal & General, and Greater Manchester Pension Fund, Bruntwood SciTech’s unique experience of working in strategic partnership across all sectors drives inclusive, sustainable growth through investment in science and technology infrastructure.

**Description of transaction**

In 2023, Lloyds Bank acted as sole ESG coordinator on GBP 380 million of sustainability-linked financing to Bruntwood SciTech. The financing included GBP 100 million of new facilities provided by a group of lenders to support regional growth. This transaction is supporting the greening of the built environment system of Lloyds Banking Group’s environmental sustainability strategy. The transaction is aimed at helping Bruntwood SciTech pursue its net zero by 2050 goals and more immediate actions to build energy efficient buildings.

GBP 330 million of sustainability-linked lending is aligned to Bruntwood SciTech’s sustainability targets. These include:

1. Improving the Energy Performance Certificate (EPC) ratings of buildings,
2. A year-on-year reduction in carbon intensity,
3. A reduction in embodied carbon across new building developments, and
4. An increase in whole building renewable energy procurement.

These energy efficiency measures support Bruntwood SciTech’s ambitious decarbonization plans, which include aiming for all new developments to be net zero in both construction and operation — in communal areas — as part of its target to become a fully net zero business by 2050.

Lloyds Bank provided a GBP 50 million green loan for the development of No.3 Circle Square, in the Manchester Oxford Road Corridor innovation district to help realize Bruntwood SciTech’s ambitions for No.3 Circle Square to achieve BREEAM Excellent Status, a NABERS 5 Star rating, and an EPC A rating. The development will feature an innovative all-electric heating and cooling system, advanced air source heat pumps, and new landscaped space to increase biodiversity.

The funding includes an example of two different GFANZ transition financing strategies: Climate Solutions through the GBP 50 million green loan for the development of No.3 Circle Square and Aligning via the broader sustainability linked loan measures that focus on Bruntwood SciTech progressing towards key decarbonization ambitions.

### Climate Solution transaction<sup>23</sup>

Low carbon buildings are a critical component of long-term net zero strategies, as buildings will continue to exist and need to have as low a carbon footprint as possible. The GBP 50 million green loan for the development of No.3 Circle Square to achieve BREEAM Excellent Status, a NABERS 5 Star rating and an EPC A rating will ensure that a low real economy GHG emission building is put in place, as opposed to one that would otherwise have higher annual and lifetime operational emissions. The transaction aligns well to the GFANZ Climate Solution attributes of demonstrating direct or indirect net contribution to real-economy emissions reductions in a significant manner that does not extend the lifetime of assets identified for phase out.

### Aligning Strategy<sup>24</sup>

The GFANZ Aligning Strategy focuses on supporting entities that are committed to transitioning in line with 1.5 degree aligned pathways. This transaction has many of the GFANZ Aligning attributes as Bruntwood SciTech has developed a transition plan and has made commitments to be a net zero business by 2050 across Scope 1, 2 and 3 emissions. Additionally, it has also committed that all areas under its direct control will achieve net zero carbon by 2030 across Scope 1 and 2 emissions. The sustainability linked loan put in place is also linked to performance against several interim sustainability targets related to improving the EPC ratings of buildings; a year-on-year reduction in carbon intensity; a reduction in embodied carbon across new build developments; and an increase in whole building renewable energy procurement.

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23 Lloyds Banking Group does not currently classify transactions using the GFANZ strategies of Climate Solutions, Aligned, Aligning or Managed Phaseout. The examples here indicate some of the attributes of the GFANZ strategies that are applicable to the transaction highlighted.

24 Lloyds Banking Group does not currently classify transactions using the GFANZ strategies of Climate Solutions, Aligned, Aligning or Managed Phaseout. The examples here indicate some of the attributes of the GFANZ strategies that are applicable to the transaction highlighted.

## 8. LONDON STOCK EXCHANGE GROUP (LSEG)

**Sector:** Financial Services Providers

**HQ Geography:** United Kingdom

**Firm Overview:** LSEG is one of the world's leading providers of financial markets infrastructure and delivers financial data, analytics, news and index products to more than 40,000 customers in over 170 countries.

LSEG has set out a variety of goals for its products and services using the Net Zero Financial Service Providers Alliance (NZFSPA) framework as a basis. These goals cover LSEG's role as a data and analytics provider, as an exchange, and as an index provider.

In relation to this case study, it is worth noting that LSEG, through FTSE Russell, has set targets to grow the range of climate transition indexes it provides to the market including the FTSE TPI Climate Transition Index Series. LSEG is also an active member within the GFANZ Index Investing workstream to help identify opportunities and hurdles associated with the construction and maintenance of Net Zero indices.

### STRATEGY

#### LSEG's approach to Transition Finance

LSEG is a leading global financial infrastructure and data provider, playing a vital social and economic role in the world's financial system. LSEG provides a wide range of services to meet customer demand to enable the financial industry and community to integrate climate and net zero considerations into financial decision-making and capital raising. FTSE Russell, an LSEG business, helps investors integrate climate and climate transition priorities into index design through a combination of headline climate index families and custom indexes.

There are different approaches to measuring and judging both corporate and sovereign climate performance. LSEG curates and partners with others, such as the Transition Pathway Initiative, to offer access to a wide variety of climate data and metrics. Metrics are provided as data products by LSEG's Data and Analytics division and are also the building blocks for index solutions. The data products cover areas including corporate climate emissions; climate governance; level of involvement in climate solution products; climate targets data; as well as more sector-specific data such as

for fossil fuels extraction. These data packages are used by active investors to inform portfolio construction and corporate engagement as well as index design and construction.

There are a variety of different indexes available to meet the variety of different types of investor demand present in the market. Typically, index design starts with an existing FTSE Russell benchmark and then varies the weights of constituent companies or sovereigns by applying different climate parameters; if a constituent performs well, this leads to a relative over-weight and if it performs poorly, then a relative under-weight. Another approach is to instead include or exclude companies based on climate data. FTSE Russell's flexible model can support all types of client investment priorities — from decarbonizing investment portfolios in line with the Paris Agreement, while maintaining diversified market exposure, to investing specifically in clean tech solution providers, or using climate alongside traditional risk-premia “smart-beta” approaches to align with investment beliefs.

In addition to forming the basis of investment portfolios, indices that capture elements of the climate transition (e.g., issuer decarbonization

targets, green revenues) are used by some investors to underpin their stewardship activities by aligning their investments to corporate climate practices and performance. The transparent index methodology helps reinforce corporate engagement and stewardship, as both investors and investee firms have clarity on how they can meet index inclusion rules or increase their index weighting.

The [FTSE TPI Climate Transition Index Series](#) is a family of equity indices that capture company-level assessments by the [Transition Pathway Initiative](#) (TPI) and improve exposure to carbon and green revenues. Established in 2016, the TPI is led by asset owners and supported by asset managers with FTSE Russell acting as a data partner since initiation. The TPI's mission is to assess the world's biggest companies from high-emitting sectors on their transition to a low-carbon economy. These assessments are made available publicly on the [TPI website](#). In 2022 the TPI's ambitions were significantly expanded with the establishment of the TPI Centre at the Grantham Research Institute on Climate Change and the Environment at London School of Economics.

The core company assessments TPI publishes are Management Quality (MQ) and Carbon Performance (CP). These forward-looking assessments evaluate a company's climate governance and management of climate risks and opportunities (MQ scores), and the strength of a company's targets/commitments to decarbonize based on sector-specific pathways (CP assessments).

The FTSE TPI Climate Transition Index Series integrates MQ and CP assessments directly into its index design, providing investors with a benchmark that reflects company alignment with the climate transition. The TPI index series also adjusts exposure to carbon emissions and reserves and green revenues and applies baseline exclusions.

The first index under the FTSE TPI Climate Transition Index Series was launched in 2020 in collaboration with the Church of England Pensions Board (CofE). A key feature of this index is that a revenue share from investor usage helps fund the TPI academic research at the London School of Economics.

The five different LSEG Climate Assessment Metrics are applied in the index, which are used to over-weight and under-weight constituent companies. The weightings of these can also be customized to meet specific client needs and investment beliefs. General alignment with GFANZ transition framework is given in the rightmost column (Figure 10).

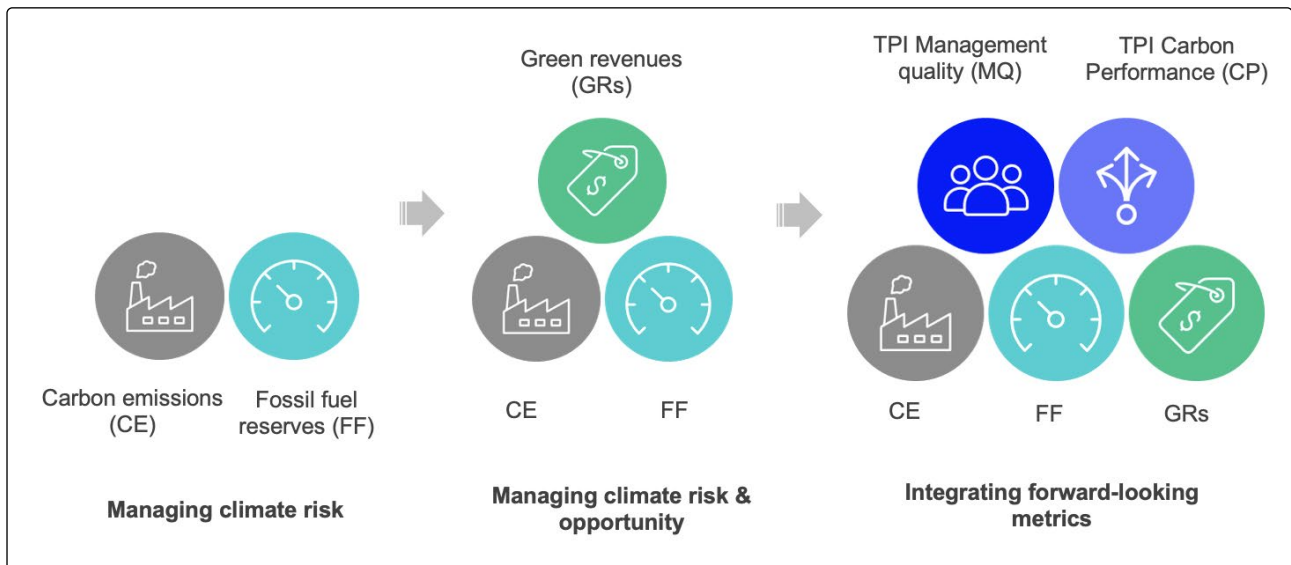
**Figure 10: Climate transition metrics in the FTSE TPI Climate Transition Index Series**

Transition metrics	Description	GFANZ Category
<b>TPI Management quality</b>	Over or underweight companies according to their management quality ("climate governance")	<b>Aligned / Aligning</b>
<b>TPI Carbon performance</b>	Over or underweight companies according to their carbon performance ("Below 2DC/1.5DC pathways")	<b>Aligned / Aligning</b>
<b>Carbon emissions</b>	Over or underweight companies according to their operational GHG emissions revenue intensity	<b>Aligned / Aligning</b>
<b>Green revenues</b>	Overweight companies contributing to the transition to a green economy	<b>Climate Solutions</b>
<b>Fossil fuel reserves</b>	Underweight companies with majority ownership of proved and probable fossil fuel reserves	<b>Managed Phase-out</b>

Source: FTSE Russell



**Figure 11: Three stages of integrating transition risk in investment indices**



Source: FTSE Russell

Since 2010 the types of climate indexes that FTSE Russell has designed have continued to evolve from an initial simple approach (managing climate risk, using 2 of the metrics), to the full integration of forward-looking metrics in the FTSE TPI Climate Transition Index Series.

The FTSE TPI Climate Transition Index Series incorporates GFANZ’s Aligned/Aligning and Climate Solutions financing strategies using the following climate data inputs:

**Aligned/Aligning**

- Traditional carbon exposure metrics (i.e., over- or underweighting based on operational carbon intensity relative to business peers) are used in constructing the FTSE TPI Climate Transition Index Series. However, alignment with net zero trajectories is primarily assessed through the two evaluation frameworks: (1) TPI Management Quality and (2) TPI Carbon Performance, which together are intended to provide a holistic view

of companies’ progress in the climate transition. Together, the TPI evaluation frameworks cover all key themes of the GFANZ Net Zero Transition Plan (NZTP) framework: Foundation, Governance, Implementation Strategy, Engagement Strategy, and Metrics and Targets.

- Ultimately, the TPI MQ assessment focuses on processes common to all companies, while the TPI CP assessment focuses on sector-specific decarbonization ambition and commitment.

**TPI Management Quality (MQ) Score**

- The TPI MQ score evaluates and tracks the quality of companies’ governance and management of their greenhouse gas emissions and of risks and opportunities related to the climate carbon transition.
- TPI MQ indicators are relevant to all companies in the investable universe, allowing investors to compare across sectors and to focus engagement on common KPIs and climate disclosures.

- Companies tend to implement their carbon management systems and alignment plans in stages. As enumerated in the GFANZ NZTP framework, companies often start by acknowledging their ambition, publicly acknowledging the relevance of climate change to their business and developing high-level policies (Attribute A), before moving on to setting increasingly stringent and quantitative targets (Attribute B).
- Accordingly, TPI's MQ framework tracks the progress of companies through the following five levels: unaware; awareness; building capacity; integrating into operational decision making; and strategic assessment.<sup>25</sup>
- This enables companies with stronger climate governance to be over-weighted in the index.
- TPI's CP assessment is based on the Sectoral Decarbonization Approach (SDA). The SDA translates greenhouse gas emissions scenarios into appropriate sector benchmarks against which the performance of individual companies can be compared. Companies are assessed as being in one of five CP categories; (i) 1.5 degrees C aligned; (ii) Below 2 degrees C; (iii) National pledges; (iv) Not aligned; and (v) No disclosure.<sup>26</sup>
- This enables companies with robust climate targets to be over-weighted in the index.

### TPI Carbon Performance (CP) Score

- TPI CP score evaluates carbon emissions and target ambition of companies in high-emitting sectors against climate scenarios consistent with the UN Paris Agreement, corresponding to the Performance attribute of the GFANZ NZTP framework (Attribute E). It does this by comparing both current and projected carbon intensities of a company's products against sector peers and against sector-specific benchmarks.
  - This approach reflects the fact that different sectors (e.g., oil and gas production; electricity generation; and automobile manufacturing) face different challenges arising from the climate transition, including where emissions are concentrated in the value chain and how costly it is to reduce emissions.
- Climate Solutions/Enablers are an area where LSEG uses a unique and separate set of data based on the [FTSE Russell Green Revenues Data Model](#), which provides investors with a highly granular and flexible dataset for corporate revenue exposure to the green economy based on detailed categorization of revenues across 133 green microsectors. Green Revenues' data can also be used to identify qualifying revenues based on the EU Sustainable Finance Taxonomy.

### Climate Solutions/Enablers

Climate Solutions/Enablers are an area where LSEG uses a unique and separate set of data based on the [FTSE Russell Green Revenues Data Model](#), which provides investors with a highly granular and flexible dataset for corporate revenue exposure to the green economy based on detailed categorization of revenues across 133 green microsectors. Green Revenues' data can also be used to identify qualifying revenues based on the EU Sustainable Finance Taxonomy.

### Green Revenues data model

- The model focuses on revenues from products and services that provide environmental solutions including climate mitigation and adaptation.
- Green Revenues percentage is either calculated from detailed company disclosure (when sufficient revenues data is provided), or estimated based on non-revenue company or sector data, if a company does not provide a suitable sub-segmental revenue breakdown.
- This allows companies with greater levels of green revenue to be over-weighted in the index.

25 For a full description of the methodology see: TPI. [TPI's methodology report: management Quality and Carbon Performance](#). Nov. 2021.

26 Information about CP methodologies for each sector are available on the [TPI website](#).

## Managed Phaseout

The Managed Phaseout category is one where the fit between the GFANZ category and the index methodology is not exact but where there is some overlap. Note that the carbon reserves data described here is also used alongside the TPI MQ and TPI CP metrics described earlier when assessing high carbon companies.

### Fossil Fuels Data Model

- This assessment aims to understand the total level of GHG emissions that are represented by a company's total coal, oil and gas reserves and is normalized by the total market capitalization of the company.
- This means that if a company has a high level of reserves relative to its market cap it is more heavily underweighted and is weighted in the index more highly if the total reserves are more negligible relative to market capitalization.

## Reception and evolution of LSEG's approach to Transition Finance

The FTSE TPI Climate Transition Index Series — and other climate index families that also use TPI data — have seen broad adoption since they were launched in 2020. Among the clients that have demonstrated significant adoption of the indices are the Church of England, Brunel Pension Fund, Phoenix Group, and the New York State Common Retirement Fund. The FTSE Russell initiative has garnered recognition within the sustainable finance ecosystem, including awards from [UN PRI](#) and [Environmental Finance](#) for innovative climate index products.

Investors are attracted to the FTSE TPI Climate Transition Index Series as a method to align their portfolios to the climate transition for various reasons, including:

- The transparent methodology and public data inputs of TPI assessment frameworks allow investors to tailor their engagement to target specific KPIs and areas of improvement for their investee firms (from risk management procedures to emissions exposure and reduction targets).
- The use of multiple metrics in a “dashboard approach” reduces the reliance on any one KPI or indicator and further adds flexibility to investor engagement strategy.
- Frameworks are used where they are most applicable; for instance, for companies in high-emitting sectors, the TPI Carbon Performance assessments deliver granular assessments using comparable sector-specific KPIs, evaluating company targets against climate scenarios.

While the overall FTSE TPI Climate Transition Index Series has remained consistent, the individual building blocks continue to evolve in sophistication:

- TPI indicators continue to change with the latest climate scenarios and corporate disclosures. For example, the Management Quality score has added a new level to further distinguish companies that disclose concrete details on the specific aspects of their transition plans (Transition Planning and Implementation).
- Other climate datasets, such as Carbon Emissions and Green Revenues, will continue to develop as disclosure rates improve and regulations align across regulatory jurisdictions.

## Lessons learned

- The FTSE TPI Climate Transition Index Series captures the philosophy of the Transition Pathway Initiative by recognizing that many investors wish to retain broad market exposure while increasing or decreasing exposure to companies that are either aligned or not aligned to key elements of the climate transition. In particular, the indices cater to growing investor demand for more sophisticated implementation approaches to climate change.
  - The index approach enables improvement of key climate transition KPIs while maintaining broad equity exposure without divestment from key sectors. The indices also fulfill existing investor requirements for sustainable investment portfolios, with significantly lowering carbon emissions and fossil fuel reserves exposures relative to market benchmarks.
  - The TPI Climate Transition Index Series offers key support to investor engagement with their portfolio companies. Through the index, pension funds can directly link improvement of a company's TPI assessment and transition commitments with increased investment flows. TPI's analysis is also a central component of the [CA100+ assessment](#), further strengthening the detail, level, and alignment of investor engagement.
  - As frameworks for both assessing alignment and identifying solution providers rely on public disclosures, it is important that index methodologies and underlying data sets make use of increasingly available and granular disclosures. Disclosures detailing transition plans and carbon reduction targets, capital spending in line with the EU taxonomy, and others as documented in the GFANZ Aligned and Aligning Attributes will all be helpful to further enhance the data, analytics, and index solutions available for investors.
  - Through the partnership of FTSE Russell with the Transition Pathway Initiative, the FTSE TPI Climate Transition Index Series continues to evolve, enabling investors to apply the latest TPI analysis directly into index design.
-

## 9. MSCI

**Sector:** Financial Services

**HQ Geography:** New York, NY (Global)

**Firm Overview:** MSCI is a provider of critical decision support tools and services for the global investment community, with over 50 years of expertise in research, data, and technology.

MSCI ESG Research LLC provides in-depth research, ratings and analysis of environmental, social, and governance-related business practices to companies worldwide. MSCI is a founding member of the Net Zero Financial Service Providers Alliance (NZFSPA).

### STRATEGY

#### STEERING TOWARD AN ALIGNED PORTFOLIO: MAPPING ISSUERS TO NET-ZERO INVESTING FRAMEWORKS

##### What this research is about

Many investors, including some MSCI ESG Research clients, use various methodologies to assess the alignment of their portfolios with global climate goals. MSCI mapped issuers against the Net Zero Investment Framework (NZIF), developed by the Paris Aligned Investment Initiative (PAII), to identify such alignment trends. The PAII was formed by the Institutional Investors Group on Climate Change (IIGCC) and other global investor groups to help asset owners align their portfolios with the Paris Agreement goals. NZIF uses a five-tier maturity scale based on seven criteria to evaluate investments' alignment with the goals of the Paris Agreement.

The GFANZ four key transition financing strategies (Climate Solutions, Aligned, Aligning and Managed Phaseout) use similar concepts based on a

“bucketing” of issuers according to certain discrete climate-related characteristics. Specifically, the GFANZ four key transition financing strategies are principles-based and are intended to be applicable globally and to all sectors, whereas NZIF provides more granularity to the specific use cases of asset managers and asset owners. Thus, MSCI believes its recent research on the NZIF can provide insights to GFANZ members striving to apply such climate investing frameworks to their investment management strategies.<sup>27</sup>

MSCI's research applied the NZIF to issuer-level data on constituents of the MSCI World Investable Market Index (IMI) and MSCI Emerging Markets IMI in order to assess portfolio alignment with global net-zero emissions by 2050 as well as to identify key alignment gaps. MSCI highlights what the NZIF approach produces when applied to issuer-level data. Note: the research applied the NZIF 1.0 framework; it will be updated to cover the recently launched NZIF 2.0 framework.

<sup>27</sup> For a mapping of NZIF's framework against the four GFANZ transition finance strategies see: GFANZ Secretariat. [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023, p. 15.

### The methodology MSCI applied in this research

The NZIF is designed to offer guidance to asset owners and asset managers. It provides a basis on which they can make commitments to achieve net-zero emissions and to define strategies, and analyze alignment and transition portfolios.<sup>28</sup> To achieve these objectives, the NZIF provides a five-tier maturity scale consisting of the following alignment categories: (1) achieving net-zero, (2) aligned, (3) aligning, (4) committed, and (5) not aligned, based on the combination of criteria issuers fulfill. According to this framework,

investors can assess portfolio alignment by classifying a group of portfolio companies into one of the five alignment categories based on certain criteria (Figure 12).

The NZIF also classifies companies into two sectors: high-impact (i.e., companies on the Climate Action 100+ focus list; those in high-impact sectors according to the Transition Pathway Initiative; and companies in the banking and real estate sectors) and low-impact sectors (i.e., all other sectors). About 35% of MSCI World IMI and MSCI Emerging Markets IMI constituents are in high-impact sectors.

**Figure 12: The seven NZIF criteria**

Asset alignment criteria		Categories				
Criteria	Descriptions	Achieving net-zero	Aligned	Aligning	Committed	Not aligned
Net-zero criteria	Achieving current emissions-intensity performance at, or close to, net-zero emissions with an investment plan that will maintain it	■				
1. Ambition	A long-term 2050 goal consistent with achieving global net-zero		■		■	
2. Targets	Short- and medium-term emissions reduction targets (Scopes 1, 2 and material Scope 3)		■	■		
3. Emissions performance	Current emissions-intensity performance (Scopes 1, 2 and material Scope 3) relative to targets		■			
4. Disclosure	Disclosure of Scopes 1, 2 and material Scope 3 emissions		■	■		
5. Decarbonization strategy	A quantified plan setting out measures to meet climate targets and deliver and increase green revenues		■	■		
6. Capital allocation alignment	A clear demonstration that the capital expenditures of the company are consistent with achieving net-zero emissions by 2050		■			

Data as of April 23, 2024. Sources: MSCI ESG Research, PAII, NZIF  
 Companies in low-impact sectors were required to meet Criteria 2, 3 and 4 (highlighted by the red rectangle) to be assessed as aligned.

28 IIGCC. [Net Zero Investment Framework Implementation Guide](#), April 2021.

Using the [MSCI Climate Change Metrics](#), MSCI developed an indicative data-mapping solution matching issuers against the NZIF-alignment maturity scale and sector types, based on the proposed criteria. It applied this solution to the constituents of the MSCI World IMI and MSCI Emerging Markets IMI to assess how well these listed companies were aligned with net-zero emissions by 2050, according to the NZIF maturity scale. It assessed portfolio alignment across sectors and markets and discussed the key alignment gaps vis-à-vis the NZIF criteria and their implications for investors using this framework.

## Notable takeaways and learnings

### Regulation influences maturity

A higher proportion of companies in developed markets (represented by the MSCI World IMI constituents) than companies in emerging markets (represented by the MSCI Emerging Markets IMI constituents) fit the NZIF categories of aligned, aligning, and committed across both the high- and low-impact sectors (Figure 13). It is possible that more stringent nationally determined contributions (NDCs) and mandatory climate-disclosure regimes in developed markets improved the climate reporting maturity of issuers, whereas voluntary climate-disclosure regimes, which are common in emerging markets, are a weaker incentive to disclose.

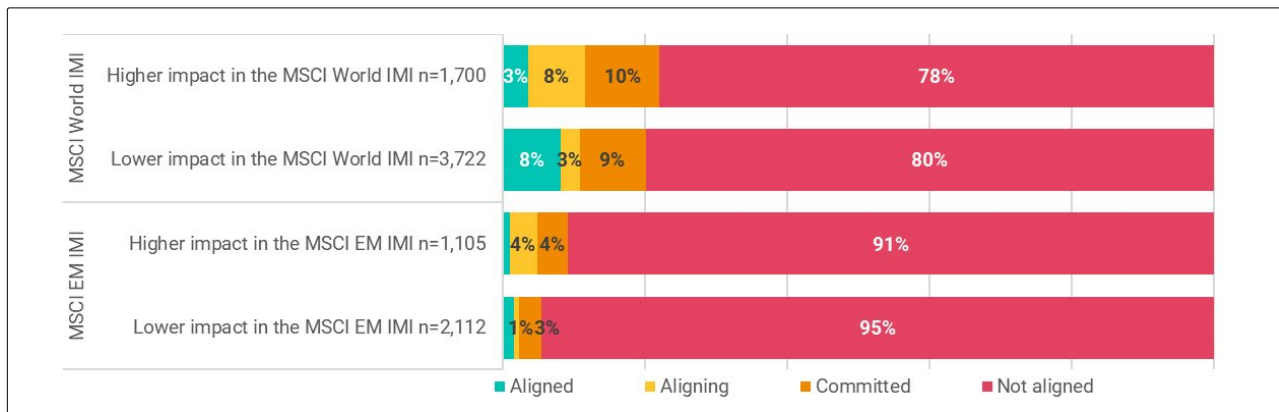
MSCI also observed that a larger proportion of companies in the high-impact sectors met at least one of the criteria and were more likely to fall into the maturity-scale categories of aligning or aligned than companies in low-impact sectors. For the aligning category, companies are required to meet criteria such as target setting (Criterion 2), emissions disclosure (Criterion 4) and decarbonization strategy (Criterion 5). Companies

in high-impact sectors, such as utilities and steel, have faced stronger regulatory pressure to disclose data and initiatives related to these three criteria. They have lagged, however, in setting ambitious net-zero targets (Criterion 1).

For the committed category, companies are only required to meet the ambition criteria (Criterion 1), which requires them to have set a long-term 2050 target consistent with achieving global net-zero emissions. MSCI's indicative mapping adopts the Science Based Targets initiative (SBTi) definition of net-zero targets coverage for corporates (i.e., avoiding at least 95% of company-wide Scope 1 and 2 emissions and 90% of Scope 3 emissions by 2050 or sooner) and assesses whether company-projected emissions are aligned with net-zero emissions pathways. The lack of an SBTi standard for the fossil-fuel sector does not exclude companies in that sector from meeting that criterion in the indicative mapping. The fossil-fuel sector is indeed explicitly covered by the NZIF maturity scale. Its issuers can therefore meet criterion 1 as long as the corporate disclosure of net-zero targets meets the above definitions.<sup>29</sup>

29 SBTi. [Sector Guidance Summary](#), last accessed 1 Feb. 2024, and SBTi. [Corporate Net-Zero Standard](#), October 2021. MSCI has set the scope of Criterion 1, using its own model, without the IIGCC Secretariat. Also note that companies in any sector can set SBTi-approved targets using an absolute contraction approach.

**Figure 13: Distribution of maturity-scale criteria**



Data as of April 23, 2024. Source: MSCI ESG Research.

**High-impact sectors are highly regulated, too**

A higher proportion of companies in high-impact sectors meet at least one maturity-scale criterion — but fewer meet all criteria and fall into the aligned category — compared to low-impact sectors.<sup>30</sup> As a result, companies in high-impact sectors are more likely to fall into the NZIF aligning or committed categories than peers in lower-impact sectors. This may be due to the fact that higher-impact sector companies face stronger pressure from investors and regulators to disclose emissions and to reduce emissions than peers in lower-impact sectors. However, they still need to meet the NZIF’s rigorous standards to be considered aligned with the Paris Agreement.

**Performance gaps across specific criteria**

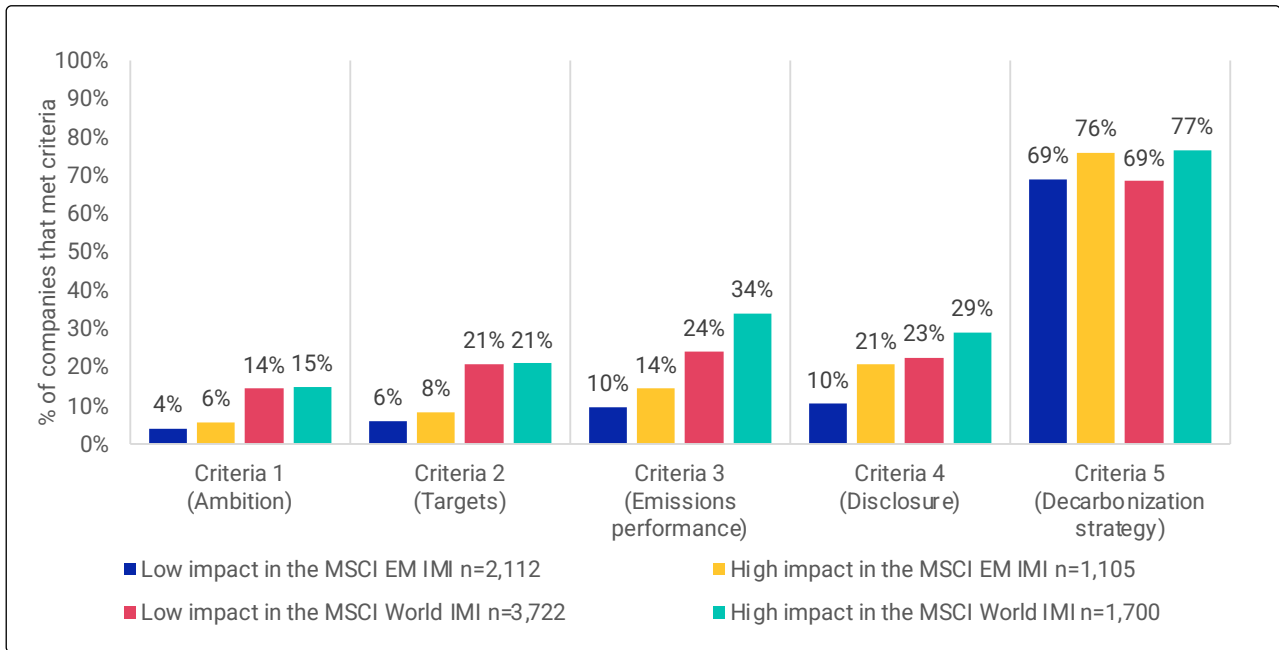
Breaking down the maturity-scale criteria met by companies reveals performance gaps across those criteria. As shown in Figure 14, many issuers have set some type of decarbonization strategy (Criterion 5) across markets and sectors. But, few companies aim for net-zero emissions across Scopes 1, 2 and 3 by 2050 (Criterion 1); set short- and medium-term emissions reduction targets (Criterion 2); demonstrate they are on track to meet these targets (Criterion 3); or disclose Scopes 1, 2 and material categories of Scope 3 emissions (Criterion 4).<sup>31</sup>

30 IIGCC. [Net Zero Investment Framework Implementation Guide](#), April 2021.

31 MSCI ESG Research defines material categories of Scope 3 emissions in line with the SBTi standard as representing more than 40% of total company emissions, according to MSCI’s Scope 3 estimation model.



**Figure 14: Performance across maturity-scale criteria by impact categories and markets**



Data as of April 23, 2024. Source: MSCI ESG Research.

### Simplicity matters

Certain climate models are inherently complex. For example, [MSCI's Implied Temperature Rise \(ITR\)](#) metric is designed to project future climate impact by computing forward-looking granular sectoral and regional factors as well as notions of carbon budgeting. MSCI's ITR assessments can provide a complementary analysis to the NZIF maturity-scale solutions. For investors who find such models challenging, the NZIF maturity-scale alignment, as well as the GFANZ four key transition financing

strategies, provide a framework to start analyzing (but not quantifying) portfolio alignment with the goals of the Paris Agreement.

### Further reading

See [MSCI's full research paper](#) for details.

## 10. NATWEST GROUP

**Sector:** Bank

**HQ Geography:** United Kingdom

**Firm Overview:** NatWest Group is a UK-focused banking organization, serving over 19 million customers, with business operations stretching across retail, commercial, and private banking markets.

NatWest Group continues to play a part in supporting the UK's transition to a net-zero future by helping its customers make sustainable choices and take advantage of the growth opportunities arising from decarbonization, as well as embedding sustainable practices in business operations.

NatWest Group is a signatory to the Net Zero Asset Managers initiative (NZAM) and a member of the Institutional Investors Group on Climate Change (IIGCC), which helps to shape asset management net-zero standards. NatWest Group also continues to engage with — and contribute to — quarterly plenary calls on members' progress toward Net Zero Banking Alliance (NZBA) commitments. NatWest Group has an ambition to be net zero by 2050 across its financed emissions, assets under management (AUM), and operational value chain.

Combatting the impacts of climate change will require a collaborative and wide-reaching effort. NatWest Group works with partners, stakeholders, and peers to deliver on its climate ambition, keeping in mind accordance with relevant antitrust rules. In 2023 NatWest Group continued to engage with investors, non-governmental organizations (NGOs), and key stakeholders on the actions NatWest Group is taking to play its part in helping to address the climate challenge.

### STRATEGY

#### Climate ambitions and transition financing strategy overview

**NatWest Group's 2030 climate ambitions are to:**

1. At least halve the climate impact of its financing activity by 2030, against a 2019 baseline, and align with the 2015 Paris Agreement;
2. Reduce carbon intensity of its Managed Assets by 50% by 2030, against a 2019 baseline, and to move 70% of Managed Assets to a net-zero trajectory;<sup>32</sup> and
3. Reduce emissions for its operational value chain by 50%, against a 2019 baseline.<sup>33</sup>

#### How NatWest Group is helping address the climate challenge

##### 1. Supporting customer transition to net zero

NatWest Group has a target to provide GBP 100 billion climate and sustainable funding and financing between 1 July 2021 and the end of 2025. As part of this, it aims to provide at least GBP 10 billion in lending for Energy Performance Certificate (EPC) A and B rated residential properties between 1 January 2023 and the end of 2025.

NatWest Group has an ambition to support its UK mortgage customers to increase their residential energy efficiency and incentivize

<sup>32</sup> NatWest Group's net zero by 2050 AUM ambition encompasses total AUM, including Managed Assets, Bespoke and Advisory, refer to [NWG Climate-related Disclosure Report \(CRDR\)](#), p. 76, for details. NatWest Group considers Managed Assets (those assets it invests on its customers' behalf, which represented 84% of AUM as at 31 December 2023) to be in scope for NatWest Group's interim 2030 portfolio alignment target and weighted average carbon intensity (WACI) ambition. For details, refer to [Net Zero Asset Managers Initiative's Initial Target Disclosure Report](#), May 2022, pp. 38-39.

<sup>33</sup> NatWest Group's operational value chain captures greenhouse gas emissions Scopes 1, 2 and 3 (Categories 1-14, excluding Categories 8, 10, 14). Scope 3 category 15 (financed emissions) is discussed in section 5.2 and 5.3 of [NWG Climate-related Disclosure Report \(CRDR\)](#).

purchasing of the most energy efficient homes, with an ambition that 50% of NatWest Group's mortgage portfolio has an EPC rating of C or above by 2030.

## 2. **Helping to end the most harmful activities**

NatWest Group plans to phase-out of coal for UK and non-UK customers who have UK coal production, coal fired generation, and coal-related infrastructure by 1 October 2024, with a full global phase-out by 1 January 2030.<sup>34</sup>

## 3. **Powerful partnerships and collaborations**

NatWest Group plans to collaborate cross industry and create products and services to support customers in their transition to net zero.

## 4. **Getting its own house in order**

Each year, NatWest Group plans to include targets for executive remuneration that reflect its latest climate ambitions.

It continues to integrate the financial and non-financial risks arising from climate change into its enterprise-wide risk management framework (EWRMF) in accordance with its multi-year climate risk maturity approach.

NatWest Group has an ambition to reduce its direct own operations' emissions by 50% by 2025, against a 2019 baseline.<sup>35</sup>

It plans to use only renewable electricity in its direct own global operations by 2025 (RE100) and improve its energy productivity 40% by 2025, against a 2015 baseline (EP100).

NatWest Group plans to install electric vehicle charging infrastructure in 15% of spaces across its UK portfolio by 2030 and upgrade its fleet of around 100 vehicles to electric by 2025 (EV100).

## **2023 Climate progress highlights**

In 2023, NatWest Group continued to implement and refine its climate transition plan.

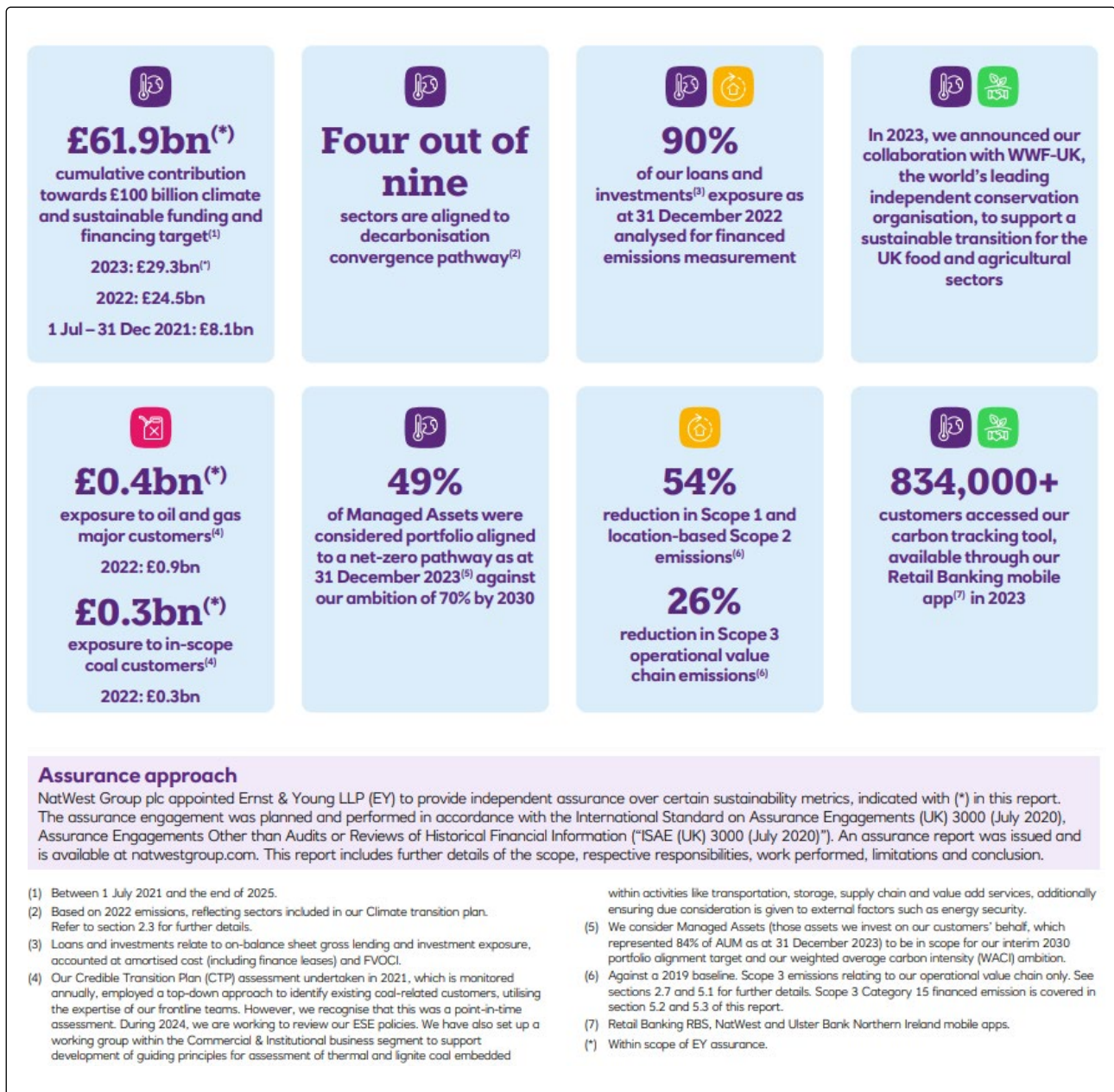
### **Systems thinking approach**

NatWest Group recognizes that the decarbonization of certain sectors can have a large impact on decarbonization within other sectors, the most prominent being energy. Also, opportunities within one sector may be dependent on other sectors, for example, within property-related sectors there is a dependency on low-carbon building materials, efficient building practices, and adequate supply chains to support the decarbonization of residential mortgages and commercial real estate. A systems thinking approach considers how carbon flows between sectors in the economy, and factors that determine the magnitude of those carbon flows. These factors can include government policy; carbon intensity of materials; technologies and infrastructure; configurations of existing value chains; and consumer preferences and behaviors.

<sup>34</sup> Data challenges, particularly the lack of granular customer information, create challenges in identifying customers with "coal related infrastructure" (e.g., transportation and storage) and other customers with coal-related operations within NatWest Group's large and diversified customer portfolios.

<sup>35</sup> Direct own operations are defined as Scope 1, Scope 2, and Scope 3 (paper, water, waste, business travel, commuting, and work from home) emissions. It therefore excludes upstream and downstream emissions from NatWest Group's value chain.

Figure 15: NatWest Group’s 2023 climate progress highlights



Source: NatWest Group

**Figure 16: Systems thinking — Cross-cutting, interconnected systems that impact on the UK’s carbon footprint and customers’ day-to-day lives**



Source: NatWest Group

## Supporting customer transition

Since the GBP 100 billion target that came into effect in July 2021, NatWest Group has provided GBP 61.9 billion of climate and sustainable funding and financing (GBP 29.3 billion in 2023).<sup>36</sup> This consisted of GBP 52.6 billion (GBP 25.4 billion in 2023) in Commercial & Institutional (including NatWest Markets GBP 30.3 billion (GBP 14.8 billion in 2023), and RBS International GBP 4.6 billion (GBP 2.3 billion in 2023)), GBP 8.8 billion in Retail

Banking (GBP 3.7 billion in 2023) and GBP 0.5 billion in Private Banking (GBP 0.2 billion in 2023).

Supporting its customers’ transition remains a key driver in the ongoing development and delivery of its transition plans. Business teams within each sector have worked to identify products, services, and business model changes to support customer transition.

<sup>36</sup> The GBP 61.9 billion cumulative climate and sustainable funding and financing total consists of GBP 34.7 billion in lending and GBP 27.2 billion in underwriting transactions.

NatWest Group’s progress across sectors varies based on actions taken in providing products and services, as well as on government policies, which provide an impetus to drive customer demand and technology developments. In particular:

- The funding of renewable electricity generation, and therefore its overall expansion, has reduced the dependence on fossil fuel generation, resulting in a decrease in absolute emissions by 1.7 MtCO<sub>2</sub>e and physical emissions intensity by 53%, between 2019 and 2022.
- Scope 1 and 2 absolute emissions and physical emissions intensity for the oil and gas sector has reduced by 1.5 MtCO<sub>2</sub>e and 12% respectively.
- In residential mortgages, NatWest Group has provided GBP 9.3 billion funding for EPC A and B rated properties since July 2021, including GBP 3.9 billion in 2023.

Figure 17 below includes the following for each sector analyzed within NatWest Group’s climate transition plan as at 31 December 2022:

1. Estimated absolute emissions;
2. Estimated physical emissions intensities;
3. Estimated physical emissions intensity based on convergence points aligned to external scenarios;<sup>37</sup> and
4. Red, amber, green (RAG) status based on comparison of 2022 convergence point and 2022 estimated physical emissions intensities.

**Figure 17: Estimated emissions for NatWest’s climate transition plan and RAG status comparison between 2021 and 2022<sup>38</sup>**

Sector model	2022				2021
	Scope 1 and 2 (MtCO <sub>2</sub> e)	Physical emissions intensity <sup>(2)</sup>	Convergence point	RAG	RAG
Residential mortgages	2.8	38.4 kgCO <sub>2</sub> e/m <sup>2</sup>	33.3 kgCO <sub>2</sub> e/m <sup>2</sup>	■	■
Commercial real estate	0.3	51.5 kgCO <sub>2</sub> e/m <sup>2</sup>	54.0 kgCO <sub>2</sub> e/m <sup>2</sup>	■	■
Agriculture – Primary farming	3.4	1,860 tCO <sub>2</sub> e/£m	2,009 tCO <sub>2</sub> e/£m	■	■
Automotive manufacturing	0.0	258.6 gCO <sub>2</sub> e/v-km	235 gCO <sub>2</sub> e/v-km	■	■
Land transport and logistics					
Freight road	0.3	47.1 gCO <sub>2</sub> e/t-km	34.8 gCO <sub>2</sub> e/t-km	■	■
Passenger rail	0.1	74.3 gCO <sub>2</sub> e/p-km	44.9 gCO <sub>2</sub> e/p-km	■	■
Passenger road	0.3	111.8 gCO <sub>2</sub> e/p-km	59.4 gCO <sub>2</sub> e/p-km	■	■
Electricity generation	0.7	103.7 kgCO <sub>2</sub> e/MWh	217 kgCO <sub>2</sub> e/MWh	■	■
Oil and gas	0.2	3.6 tCO <sub>2</sub> e/TJ	3.6 tCO <sub>2</sub> e/TJ	■	■
<b>2022 NatWest Group estimate – RAG status</b>					

Source: NatWest Group

37 Refer to section 5.2 of [NWG 2023 Climate-related Disclosure Report \(CRDR\)](#) for further detail of physical emissions intensity metrics used to estimate reduction required by 2030.

38 To estimate emissions intensity reduction required by 2030 (convergence year), NatWest Group used externally published independent scenarios to estimate convergence points for 2022, 2030, and 2050 by sector based on a 2019 baseline. The convergence points are determined based on the rate of change required by the external scenario each year from 2019. The graphs included in section 2.3 of [NWG 2023 Climate-related Disclosure Report \(CRDR\)](#) include convergence points for 2030 and 2050, being the expected trajectory (convergence pathway) for alignment with the 2015 Paris Agreement. In general, NatWest Group used the UK CCC’s BNZ scenario or the International Energy Agency Beyond 2 Degree Scenario (IEA B2DS) scenario for various sectors aligned with the Sectoral Decarbonization Approach (SDA) prescribed by the SBTi guidance. Aligned with the SBTi guidance, NatWest Group used those scenarios that require the greatest percentage reduction in intensity for each sector. More detail regarding the scenarios used for each sector can be found in section 5.3 of [NWG 2023 Climate-related Disclosure Report \(CRDR\)](#).

## REAL-ECONOMY TRANSACTION

Climate  
Solutions

Aligned

**First Group****Sector:** Transport**HQ Geography and Key Markets:** UK**Form of Finance/Type of Transaction/Asset****Class:** Syndicated debt facility, associated interest rate swap hedges, plus syndicated hire purchase (HP) facility**Amount of Capital Committed and/or****Deployed:** GBP 96 million (syndicated debt) + GBP 50 million (syndicated HP)**Investment Horizon/Duration/Contract Period:**

12 years

[FirstGroup](#) is the UK's leading public transport company. Its First Bus division serves two-thirds of the UK's 15 largest urban areas, carrying over 1 million passengers a day, and operating a fleet of over 4,500 buses.

In line with FirstGroup's goal to become net-zero by 2050, the company is committed to achieving a zero-emissions bus fleet by 2035. As part of this commitment, First Bus expects to have four fully electric depots and more than 600 zero-emissions buses in the fleet by March 2024.

As part of this net-zero plan, in 2021 First Bus announced a partnership with Hitachi Europe, delivering a decarbonization project at its flagship Caledonia depot in Glasgow in May 2022. The success of this project led to the establishment of a joint venture between FirstGroup and Hitachi to support further fleet transition.

Seeking funding for 1,000 batteries to be operated in FirstGroup's growing electric bus fleet, the joint venture between FirstGroup and Hitachi approached NatWest to participate in a standalone syndicated debt facility.

The transaction required an innovative structure to give FirstGroup and Hitachi the flexibility to manage the four-year period over which the bus batteries will come into service, their ongoing operation, and eventual replacement.

NatWest entered into a 12 year syndicated loan facility of GBP 96 million to fund up to 1,000 bus batteries on a standalone basis, with the batteries then being leased to First Bus operating entities. NatWest also acted as sole hedge coordinator for the associated interest rate swaps.

Alongside the battery transaction, FirstGroup invited NatWest to participate in a separate three-bank syndicate hire purchase (HP) facility to finance the purchase of electric bus husks (i.e., the chassis and drivetrain, excluding the battery).

The HP facility totaled GBP 150 million with NatWest providing a GBP 50 million commitment. The facility will be used to finance the husks, some with government grant funding, such as the ScotZeb scheme (Scottish Zero Emission Bus Challenge Fund) in Scotland and equivalent Zebra scheme (Zero Emission Bus Regional Areas Scheme) in England, with tenors of either 7 or 10 years depending on the specific requirement at the time each batch of husks is financed.

**Customer and colleague engagement**

In 2023, NatWest Group refined its climate transition plan, focusing on the delivery of its 2030 decarbonization ambitions while furthering its understanding of the need for timely and appropriate government policies to create demand for financial solutions and products to support customer transition. This has informed its work on government and policy engagement, the creation of opportunities to support customers, and its approach to collaborations.

Climate-related opportunities include finding ways to support customers in their transition journey, whether through the provision of funding and

financing or through products and services to support their transition, as well as engagement and education tools. These include:

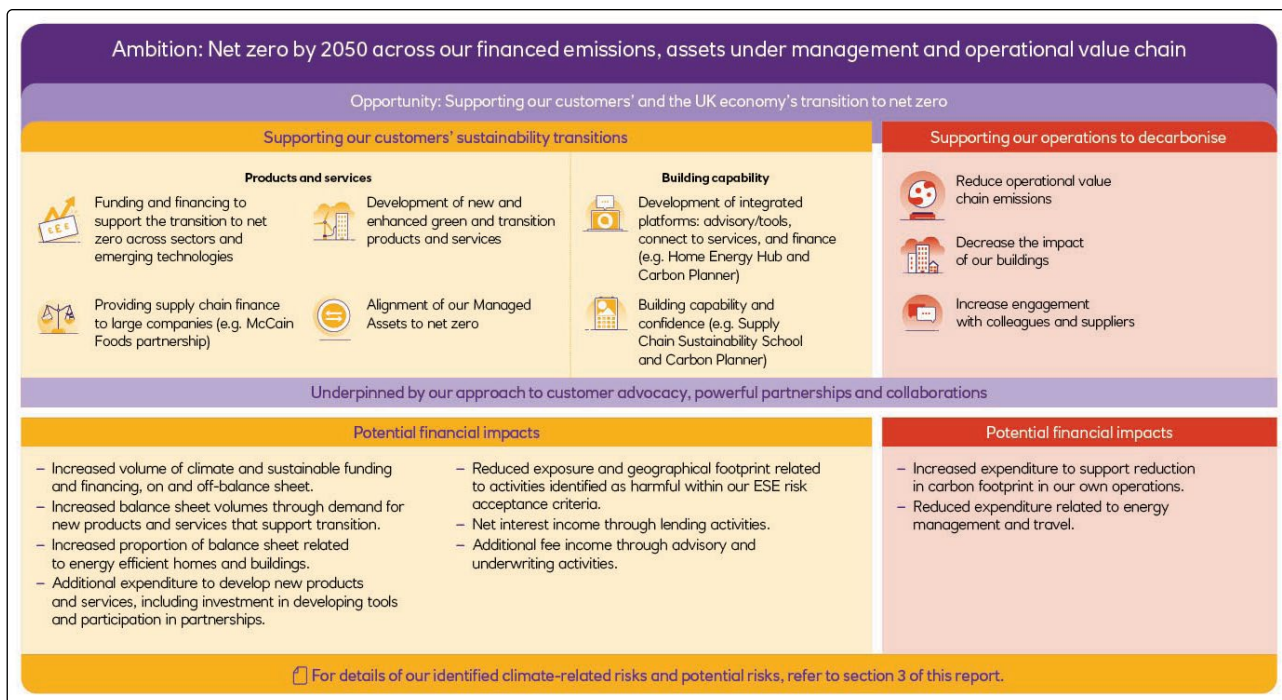
- Carbon Planner, a free-to-use digital platform designed to help UK businesses manage their future fuel and operational costs and reduce their carbon footprint; and
- The Home Energy Hub, a publicly available and free-to-use online portal that provides homeowners with a single site to learn about potential home energy efficiency benefits, access to trusted tradespeople to deliver upgrades, and finance options including available grant funding.

In 2023 NatWest Group continued to develop its Climate Decisioning Framework (CDF) tools within the Commercial & Institutional business segment, to further embed climate within customer journeys to continually enhance decision-making.

NatWest Group's main focus during 2023 has been the development of its CDF customer engagement tools: Customer Transition Plan Assessment (CTPA) and Climate Risk Scorecards (CRS), as well as building on its Carbon Planner.<sup>39</sup> These tools have been designed to complement established climate engagement touchpoints with customers, such as Transaction Acceptance Standards (TAS) and the initial suite of qualitative climate scorecards. In addition to these tools, work is also ongoing to test and develop an internal carbon management framework and tools, which it plans to test in 2024 to continue to develop further.

Finally, NatWest Group recognizes the importance of investing in its people to build the future skills and behaviors it needs to realize its climate ambition. In 2023 it continued its GBP 1.5 million partnership with the University of Edinburgh Centre for Business, Climate Change and Sustainability (UoE B-CCaS) to deliver tailored climate education to all NatWest Group colleagues.

**Figure 18: Ambition: Net zero by 2050 across financed emissions, assets under management, and operational value chain**



Source: NatWest Group

39 NatWest Group customer engagement tools are described in further detail in section 3.2 of [NWG 2023 Climate-related Disclosure Report \(CRDR\)](#).



## REAL-ECONOMY TRANSACTION

Aligned &amp; Aligning

## McCain Foods

**Sector:** Food and Agriculture**HQ Geography and Key Markets:** Canada/UK and Worldwide**Nature of relationship/influence/degree of association with the real-economy client or portfolio company:**

Customer with strong ties and influence across the potato farming industry

**Company Overview:** McCain Foods is a manufacturer of frozen potato products, with smart and sustainable farming as a key pillar of its commitment to make planet friendly food, anchored on its commitment to implement regenerative agriculture across 100% of its global potato acreage by 2030.**Investment Horizon/Duration/Contract****Period:** 12 years

McCain Foods (McCain) is a manufacturer of frozen potato products.

Smart and sustainable farming is a key pillar of McCain's commitment to make planet-friendly food, which is anchored on its commitment to implement regenerative agriculture across 100% of its global potato acreage by 2030.

The transition to more sustainable farming practices often requires up-front investments by farmers in new equipment and practices, which can create a barrier to uptake. Through its asset finance arm [Lombard](#), NatWest will be offering a first-of-its-kind initiative in the UK, which will see the bank offer additional financial support to McCain potato farmers. In addition, McCain has also committed to offering a contribution toward the interest payable for assets that support regenerative agriculture practices.

Regenerative agriculture is an ecosystem-based approach to farming that aims to improve farmer resilience, yield, and quality by restoring soil health, enhancing biodiversity, and reducing the impact of synthetic inputs.

As part of its wider regenerative agriculture initiatives, McCain joined the Sustainable Markets Initiative (SMI) [Agribusiness Task Force](#) alongside a number of businesses and NGOs to further accelerate the scaling of greener practices in the farming industry worldwide, which have been hampered by high costs. McCain's partnership with Lombard and NatWest is just one way that it is helping make regenerative agriculture economically viable for UK farmers. Other initiatives include grants for cover crop seed, fully funding soil health assessments, and offering free pollinator seed this spring.

McCain is working hard to ensure the long-term viability of potato growing in the UK and it has invested GBP 50 million since 2020. As part of this, in 2020 McCain launched the [McCain Potato Farmer Pledge](#), a GBP 25 million investment designed to help ensure the long-term sustainability of British agriculture in the face of increasing climate-related events such as droughts and floods. In addition to the partnership with NatWest, McCain is continuing to support farmers in the face of rising inflation by committing to a 31% contract indexation in 2023, which equals a GBP 35 million investment.

To enable knowledge transfer to its farmers, McCain is testing regenerative agriculture practices and trialing new technology at its Farms of the Future projects in McCain's hometown of Florenceville, New Brunswick and in South Africa. This work is supported in the UK by three demonstration farms across the country.

Food-related sectors represent 35% of UK greenhouse gas emissions.<sup>40</sup> As a leading bank supporting UK farming, NatWest Group has an

40 Source: WRAP 2022 Report – includes food and drink sourced domestically and overseas.

opportunity to play a key role in supporting the UK farming community in its transition to net zero while managing a variety of cost pressures.

As part of its GBP 100 billion climate and sustainable funding and financing target, NatWest Group continues to provide funding that meets customer needs and to provide incentives for transition across a range of business models to enable sustainable agriculture. On 1 January 2023, NatWest Group expanded the scope of low-carbon technologies and practices included within its Climate and Sustainable Funding and Financing Inclusion (CSFFI) criteria under the “Sustainable Agriculture” category.

### Building powerful partnerships and collaborations

#### 1. Industry and initiative engagement to influence the net-zero agenda

During 2023, NatWest Group continued to engage with investors, non-governmental organizations (NGOs), and key stakeholders on the actions it is taking to play its part in helping to address the climate challenge. Below are some examples of how NatWest Group partners with others to unlock transition opportunities:

- **The Transition Plan Taskforce (TPT):** TPT aims to support the standardization of transition plans. NatWest Group’s CFO sits on the steering group and its Head of Climate Change chairs the TPT Banks Working Group.
- **International Capital Markets Association (ICMA):** NatWest Group contributed to the Sustainability-Linked Bond Principles and the Climate Transition Finance Handbook working groups.
- NatWest Group received a score of A in the **CDP Climate Change Survey** (2022: B).
- **Sustainable Markets Initiative (SMI):** NatWest Group continued to support the initiative of the SMI and the SMI’s Terra Carta Action Forum at COP27. It hosted an event in partnership with the SMI Agribusiness Task Force WWF-UK and Sustainable Food Trust

focused on finding the right solutions for farmers to tackle climate change.

- **Transition Finance Market Review (the Review):** In January 2024 the UK government launched the Review. NatWest Group has been contributing to the Review by providing its perspective on topics that include:
  - a. The scope of transition finance;
  - b. The credibility and integrity of transition finance;
  - c. The barriers to the application of transition finance;
  - d. The opportunity for investments, products, and services to advance transition finance globally; and
  - e. Building the UK as a global hub for transition finance.

#### 2. Embracing innovation to help accelerate change and support decarbonization through partnerships

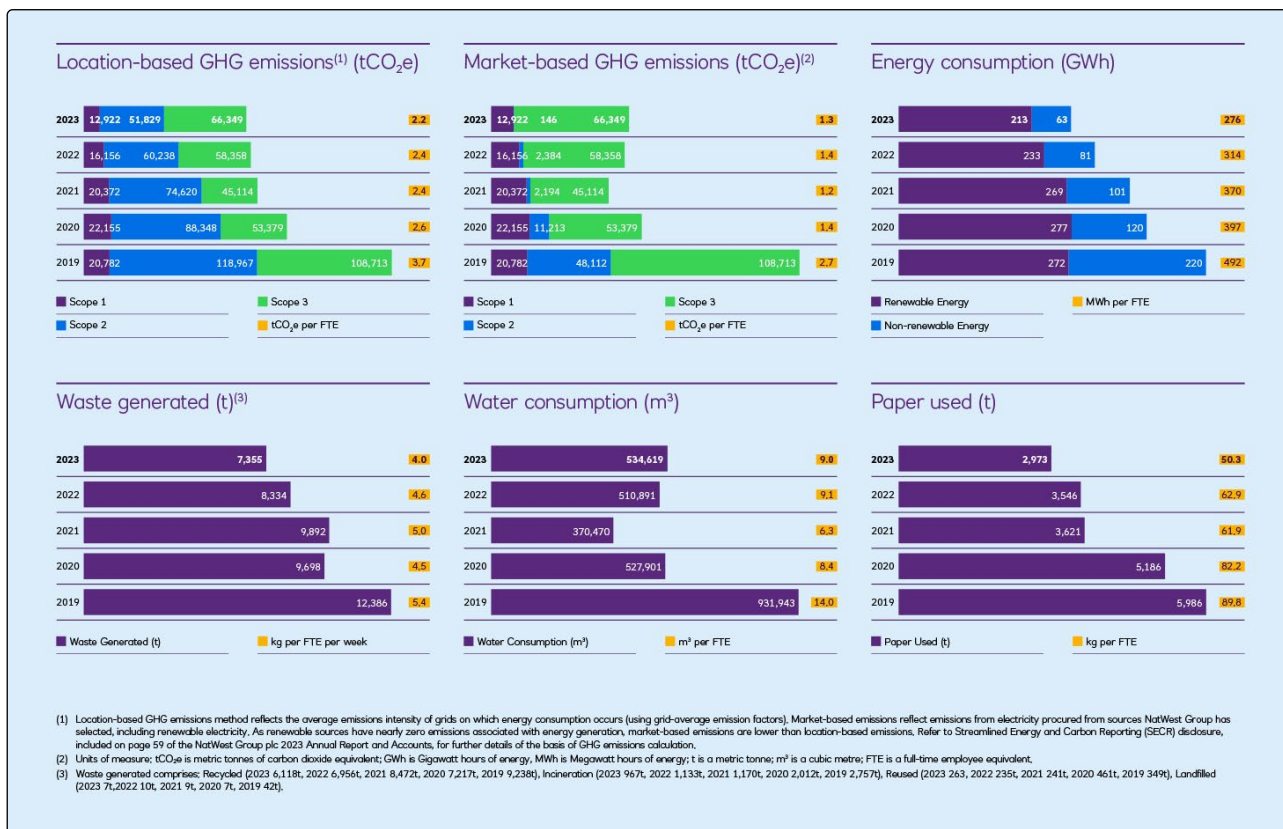
- NatWest Group partnered with **Absolar and Diode** to provide serviced solutions to SMEs on installing solar panels, as well as supporting customers in their transition to EV vehicles and associated charging requirements.
- NatWest Group partnered with **Chameleon Technology** as part of the UK Government’s Green Home Finance Accelerator Programme.
- NatWest Group continued working as a coalition with **Pineapple, Places for People, British Gas Centrica, and Schneider Electric** to explore options to deliver mass scale retrofits across the social housing sector.
- NatWest Group joined **Bankers for Net Zero (B4NZ)** which, alongside Icebreaker One, is convening a cross-sector coalition to collaboratively shape the future of emissions reporting, ensuring a wide range of stakeholder needs are met.
- NatWest Group is in the process of piloting **CFP’s Green Buildings Tool** with its commercial real estate customers, designed to help them and NatWest Group’s relationship managers identify opportunities for energy efficiency improvements.

- In November 2023 NatWest Group announced a partnership with **Airbnb** and the **Energy Savings Trust** to create an end-to-end journey supporting hosts to retrofit their homes, facilitated through NatWest Group finance options.
- NatWest Group was invited by the **Green Finance Institute** to participate in the exploration of a property-linked finance proposition for the UK market. Only two banks were invited to participate in this initiative.
- NatWest Group announced a one-year partnership with **WWF UK**, focused on policy and research campaigns that demonstrates how public and private collaboration can unlock financing to help farmers — especially those in the dairy industry — achieve sustainable climate and nature outcomes in the UK.
- In partnership with the **Warwick Manufacturing Group High Value Manufacturing Catapult**, University of Warwick, NatWest Group sponsored the **Micromobility UK** event in May 2023.

### Getting its own house in order

**Figure 19: NatWest operational emissions, consumption, and waste**

The 2019-2023 trends related to NatWest Group’s own direct operational GHG emissions, energy consumption, paper consumption, water consumption and waste generated.



Source: NatWest Group

## Lessons learned and path forward

Tackling climate change is both a significant opportunity and challenge. While NatWest Group has made some progress since setting out its climate strategy in 2020, it recognizes the scale of the task ahead.

NatWest Group continues to embed climate considerations into its decision-making processes, including further alignment of its climate transition plan with its financial plan. As part of this, by thinking systemically, it also focuses on refining and prioritizing its climate-related opportunities based on relative commercial and decarbonization potential.

Achieving climate change ambitions will require timely and appropriate government policy and

technological innovation to incentivize changes in consumer behavior. NatWest Group will continue to work with commercial and policy partners and develop effective interventions to play its part in supporting the UK's transition to a net-zero future.

Given the scale of investment and the timescale required to transition, NatWest Group expects to see an increasing proportion of future lending to support customers' investments in green and transition technologies and operations.

As NatWest Group implements its climate transition plan, it will continue to refine and prioritize climate-related opportunities based on their relative commercial and decarbonization potential and will support its customers and the wider economy transition to net zero.

### BOX 8. MEASURING DECARBONIZATION PROGRESS

Brookfield, a leading global investment firm and signatory to the Net Zero Asset Managers (NZAM) initiative, set an ambition to achieve net-zero greenhouse gas (GHG) emissions across its Operationally Managed Investments by 2050.<sup>41</sup> In 2021, Brookfield established its interim target, setting out its commitment to reduce emissions across US\$ 147 billion of its assets under management by 2030 from a 2020 base year.<sup>42</sup> Brookfield has since added more assets, increasing its interim target to US\$ 263 billion in 2023 (approximately 42% of Operationally Managed Investments).<sup>43</sup>

To inform its near-term priorities, measure progress, and facilitate value creation, the company developed an Achieving Net Zero Framework and Decarbonization Decision Tree.

#### Identification of decarbonization potential and progress

By way of background, Brookfield initially developed its Achieving Net Zero Framework as a means to measure decarbonization progress by setting out a phased approach for assets as they advance from transition plan development to being managed in alignment

41 Operationally Managed Investments consist of investments where Brookfield may be able to broadly influence and control decarbonization outcomes. As of December 31, 2023, Operational Managed Investments represent approximately 69% of Brookfield's total fair value of assets managed.

42 Expressed as the total fair value of assets managed by Brookfield Asset Management, Inc. and its affiliates excluding Oaktree Capital Management as of December 31, 2020.

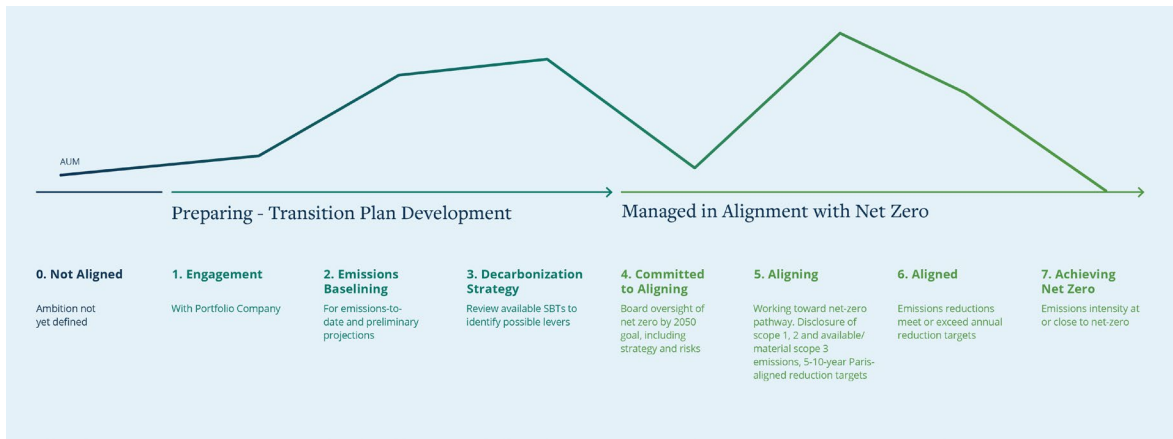
43 Represents assets included in Brookfield's NZAM interim target and the inclusion of additional assets as of December 31, 2023. Expressed as a percentage of total fair value of Operationally Managed Investments managed by Brookfield Asset Management Ltd. together with its asset management business, being Brookfield Asset Management ULC, and its subsidiaries as of December 31, 2023.

with net zero. To report on results, Brookfield plots the stages its assets fall into and it

seeks to disclose the movement of its assets along the continuum over time.

The following example highlights Brookfield’s Achieving Net Zero Framework in action:

**Figure 20: 2023 Achieving Net Zero Framework Plotting<sup>44</sup>**



44 Assets included in this analysis comprise primarily Operationally Managed portfolio companies as of 31 December 2023

Source: Brookfield

Brookfield’s Transition Strategy is allocating capital to impact some of the hardest areas to decarbonize through Paris-aligned business plans and long-term investments. It is focused on decarbonizing carbon-intensive sectors and developing clean energy and sustainable solutions to accelerate the global transition. The Strategy has a dual objective: 1) to achieve strong risk-adjusted financial returns and 2) generate a measurable positive decarbonization impact. Brookfield’s Impact Measurement and Management (IMM) Framework supports measuring and tracking progress towards advancing the stated impact objectives of each investment in the Strategy

by implementing recognized climate-reporting standards and impact frameworks.

Brookfield’s IMM Framework includes a robust set of tools applied throughout the investment process to ensure disciplined and consistent measurement and management. After assessing an investment’s alignment with the Strategy’s impact objectives, quantitative, transparent and verifiable impact targets are identified during due diligence using a credible methodology for the business or asset, informed by third-party guidance and scientific pathways, such as the Science Based Targets initiative (SBTi) pathways, where

relevant. Brookfield also determines near-term actions and creates a high-level business plan, incorporating the identified targets and an informed view of longer-term activities and resources to achieve them. These are included in the underwriting, as relevant, and are reviewed by the Strategy's Investment Committee. Post-acquisition, Brookfield's Investment and Sustainability Teams partner with the portfolio company Management Team to execute on the identified-near term actions and develop detailed business plans to deliver the impact targets and decarbonization.

This includes developing an emissions baseline and identifying the levers to support decarbonization along with the determined financial returns across scope 1, 2 and material scope 3 emissions. These levers may comprise activities such as the build out of clean energy solutions, the introduction or development of technologies to support energy efficiencies or decarbonization, carbon capture or storage, fuel switching and/or decommissioning of carbon-intensive assets. Based on the Paris-aligned business plans, Brookfield can plot each of the Strategy's investments along the Achieving Net Zero Framework as Committed to Aligning, Aligning, Aligned or Achieving Net Zero.

Furthermore, to complement the Achieving Net Zero Framework, Brookfield developed a tool, referred to as the Decarbonization Decision Tree, to assist portfolio companies in identifying tangible steps to catalyze the progression of its investments across its Framework. Brookfield realized the need for this type of tool through its collaboration with one of its portfolio companies. The company had no recognized sector-specific decarbonization pathway available, though it expressed great willingness to research

and identify any decarbonization next steps it could, nevertheless, reasonably undertake. Brookfield is utilizing the Decarbonization Decision Tree to identify common roadblocks so that it is able to surface these and assist portfolio companies in driving toward targeted decarbonization results, thereby increasing Brookfield's in-scope NZAM assets.

Once an asset's baseline plotting is determined, Brookfield leverages its Decarbonization Decision Tree to help guide its portfolio companies along a decarbonization pathway designed to assist each in realizing its full decarbonization potential. The focus is on measuring emissions; selecting the most relevant decarbonization pathways (prioritizing science-based approaches, where commercially feasible); developing emissions reduction targets; and executing on decarbonization plans. Brookfield also seeks to support its portfolio companies in incorporating into their business planning emissions forecasts, decarbonization levers, and risk assessments.

Brookfield is committed to advancing portfolio companies' decarbonization journeys even if it is not feasible for them to immediately conform to a net-zero aligned pathway. Portfolio companies may be constrained by factors such as a lack of available or commercially feasible pathways, going concern, lack of available technology, and policy support, among others. Brookfield supports the efforts of all its portfolio companies in feasible emissions reduction. It encourages portfolio companies to maximize their decarbonization potential based on current technology and policy support, continuously reassessing opportunities as these factors evolve.

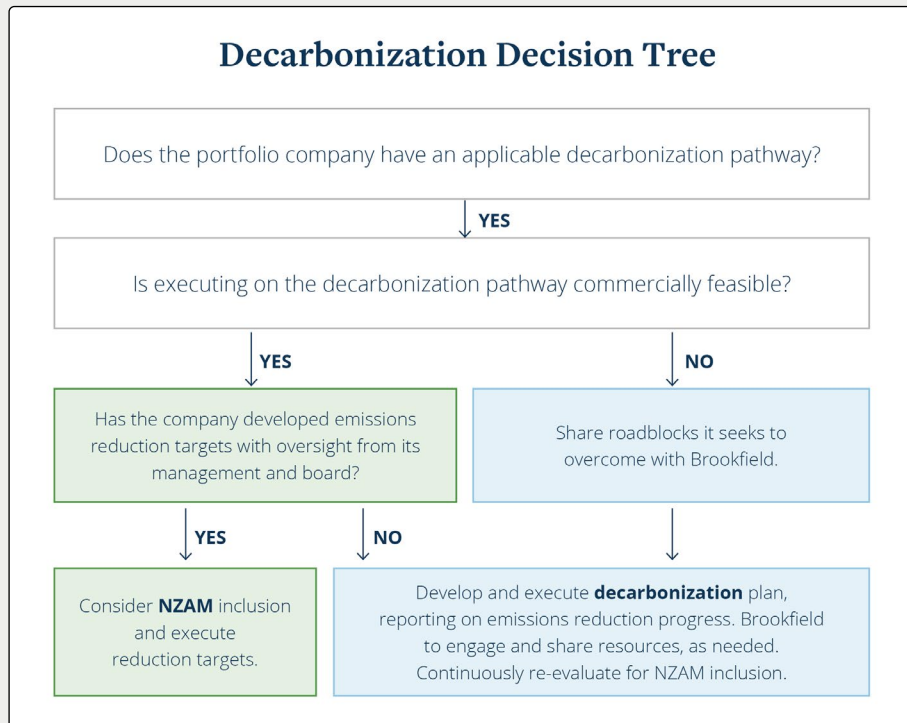
The following example highlights Brookfield’s Decarbonization Decision Tree:

**Brookfield Real Estate’s Core Office Portfolio**

In keeping with the first step of the Decarbonization Decision Tree, this portfolio referenced draft SBTi Buildings Guidance, developed in collaboration with Carbon Risk Real Estate Monitor (CRREM), as its applicable decarbonization pathway. Brookfield’s

engagement and this operational emissions pathway for residential and commercial buildings enabled the portfolio to set decarbonization plans so that it could be considered for NZAM inclusion. This portfolio continues to progress toward 5-10-year emissions reduction targets, including by procuring clean energy. The portfolio is plotted along the Achieving Net Zero Framework as Aligning and Aligned.

**Figure 21: Decarbonization Decision Tree**



The collective efforts of portfolio companies can meaningfully contribute to the reduction of Brookfield’s overall emissions profile and enhance value. Brookfield believes engaging with — and encouraging — portfolio companies to develop and execute commercially feasible decarbonization plans is an important step toward supporting and contributing to the global transition to a lower carbon economy.

Brookfield’s next steps in its net-zero journey include focusing on decarbonization efforts where it can meaningfully influence outcomes, prioritizing the allocation of resources to its portfolio companies based on the Decarbonization Decision Tree results. In addition, Brookfield continues to develop interim and long-term metrics across its assets to contextualize decarbonization progress in

consideration of its net-zero ambition and in support of the global energy transition. Beyond absolute emissions, other metrics may be considered, including emissions intensity, clean energy capacity added, avoided emissions, carbon captured, and other ratios to enrich understanding of Brookfield's net-zero progress (e.g., incorporating the time value of carbon). Finally, Brookfield is focused on urging its portfolio companies along their

decarbonization journey. Brookfield will do this through catalyzing the movement of its investments across its Achieving Net Zero Framework and encouraging assets without a feasible pathway to develop and execute decarbonization initiatives that can nevertheless reduce emissions. These next steps support Brookfield's goal of maximizing decarbonization potential across its assets under management.



## 11. NINETY ONE

**Sector:** Asset Manager

**HQ Geography:** Global

**Firm Overview:** Ninety One is an active investment manager. It invests on behalf of clients to help them achieve their long-term investment objectives. Ninety One established its business in South Africa in 1991. From these emerging market origins, it built a global footprint with current AUM of GBP 129 billion. The business operates with the purpose of "investing for a better tomorrow", which guides its culture and values. Ninety One is listed on the London and Johannesburg stock exchanges with a substantial employee ownership.

Ninety One joined the Net Zero Asset Managers (NZAM) initiative in 2021, committing to reach net-zero emissions by 2050 or sooner. It published its transition plan in 2022, which includes 2030 targets for its investments and operations.

### STRATEGY

In 2022 Ninety One committed to net zero across its corporate investment portfolio. To achieve this, it is pursuing four main channels to progress toward its net-zero investments targets:

1. **Assessment:** Assessing high-emitting companies' transition plans using its proprietary Transition Plan Assessment tool;
2. **Engagement:** Engaging companies on their transition plans to influence, change, and track progress;
3. **Solutions:** Providing investment solutions to enable increased allocations to transition finance (across climate solutions and transition investments); and
4. **Education:** Enhancing investment knowledge on net-zero technologies, industries, and innovations.

In its recent paper: [Net zero investing: searching for returns and real world change](#), Ninety One unpacks how to address net zero from a commercial standpoint, including allocating to climate solutions, transition investing, as well as how to align

companies within existing portfolios. Engagement is a key lever for change with companies it already owns, as it aims to nudge high emitting companies toward a 1.5 degrees C aligned science-based pathway.

Engagement is Ninety One's preferred means to address issues that can affect the value of investments. It defines engagements as communications with a clear purpose that seek an identified outcome. To identify a need for engagement, it assesses the materiality of the issue, the potential impact of engagement, and its ability to exert influence.

Engagement can be a long-term process and a company's willingness to engage and the progress made should be taken into consideration, alongside regional and cultural factors. Typically, before divesting, Ninety One would seek to escalate an engagement. This may involve collaborating with other shareholders and stakeholders (such as non-governmental organizations, banks, and regulators) or external initiatives, voting at shareholder meetings, and proposing its own resolutions.

With regard to the transition, Ninety One engages where it believes there is the potential to unlock value, whether through avoiding risk or maximizing transition opportunities. This principle applies to investments within each GFANZ category, with a special focus on those in Managed Phaseout and Aligning categories where the emissions are highest, and the need to decarbonize is greatest.

As part of Ninety One’s net-zero commitment, it addresses transition risk in portfolios by prioritizing those companies making up the top 50% of its financed emissions — it focuses on where it can have material impact, based on its holding or the size of the company’s emissions, or both. Many of these companies are in high emitting sectors that require meaningful investment to transition their value chains, such as diversified mining, steel, and energy utilities.

Ninety One has identified Transition Finance opportunities by developing strategies that seek to identify companies and projects that invest in the expansion of clean energy, the acceleration of sustainable solutions, and transition of companies operating in hard-to-abate or carbon-intensive sectors to a cleaner, greener model. Its latest strategy is the Emerging Market Transition Debt initiative (EMTD), which will provide emerging market companies with commercial financing to support efforts in reducing real-world emissions. It also manages strategies that are focused on scaling climate solutions across both private debt and public equities.

In its experience, companies are on a spectrum of transitioning journeys. This is especially true for those in emerging market countries. A one-size-fits-all approach does not work in such cases, and Ninety One works on a case-by-case basis to determine the transition status of companies, taking regional policies, corporate starting points, and other influences into account to develop a holistic and tailored engagement plan.

## REAL-ECONOMY TRANSACTION

Climate Solutions

Managed Phaseout

### Eskom

**Sector:** Power utility

**HQ Geography and Key Markets:** South Africa

**Nature of relationship/influence/degree of association with the real economy client or portfolio company:**

Ninety One has been invested in Eskom bonds for many years. From an emissions perspective, Eskom influences the emissions of Ninety One’s own operations and investments.

**Company overview:** Eskom is a South African public utility, established in 1923. It is the largest producer of electricity in Africa and is among the top utilities in the world in terms of generation capacity and revenues. The company is divided into Generation, Transmission, and Distribution divisions, generating 95% of electricity in South Africa and about 45% of the electricity used in Africa. The company generates 85% of its power from coal and is responsible for 42% of the country’s GHG emissions.

Eskom has been one of the highest-emitting companies in Ninety One’s corporate portfolio since the inception of Ninety One’s net-zero strategy. As a coal-based power utility, the overarching aim of the engagement is to encourage the responsible phaseout of coal assets, while scaling low-carbon energy alternatives so the entity can be aligned to a low-carbon pathway.

Eskom produces 85% of its electricity via coal-fired power generation. The company is South Africa’s sole energy utility and a keystone in the South African economy — therefore, this engagement is not just about climate or transition but affects all parts of the economy and society.

In early 2020, Eskom established a Just Energy Transition (JET) office to progress the evolution of the company’s transition to a cleaner energy future.

This office set a corporate net-zero target by 2050, with the goal of accelerating the decommissioning, repurposing, and repowering of old power stations, and scaling renewables and storage. While the announcement of this was applauded by investors, the issue of energy availability remained a contentious point in the overarching plan — coal power stations need to keep running to “keep the lights on” but in doing so, the carbon emissions of the company, and country, remain uncomfortably high.

### Engaging for the transition

The objective of Ninety One’s engagement with Eskom in relation to Transition Finance is threefold:

1. Continuing to motivate for a detailed phaseout strategy for the existing coal power plants, including decommissioning and rehabilitation, with relevant KPIs on transition progress. This may enable the company to engage in Managed Phaseout-linked financing, where available.
2. Encouraging Eskom to develop a clear and measurable plan to accelerate the amount of renewable power and battery storage available including via own build, partnerships, and power-purchasing agreements (PPAs). This opens more opportunity to attract Climate Solutions-focused finance, which would largely come from the private sector. An example of this is the Kenhardt project in the Northern Province of South Africa, which is privately owned by Scatec and another partner. The 540MW solar plant with 225MW battery storage is the world’s largest hybrid solar and battery facility, with a total capex of US\$ 1 billion. Scatec has a 20-year PPA with Eskom.
3. Encouraging the adoption of a thoughtful Just Transition plan that focuses on job creation, upskilling, and reskilling of coal workers and compensation for affected communities. Sources of such funding could be the US\$ 8.5 billion pledged by the IPG, specifically about US\$ 515 million grant financing that is available. Other potential sources are the Green Climate Fund (GCF), UNDP Small Grants Programme, and the EU Global Development Instrument.

### Key factors for success

The outcome of a successful engagement with Eskom is not just about the climate-related benefits of decreasing emissions related to power generation. Ninety One believes there is significant upside for the country, and the investor environment at large, if the company addresses its debt burden, governance issues, and overarching transition to a more stable, green energy grid. Three key factors influence the success of Eskom in this case:

1. **Leadership and capability:** the company has faced significant governance and corruption issues over the years. These problems have severely impacted operations, energy availability, the status of coal plants, financial stability, and public trust. Rebuilding this trust, repairing the damaged infrastructure and regaining control of financials is essential to the company’s transition success.
2. **Policy environment:** the ability to transition the grid has long been constrained by the local energy policy environment. Since 2020, major reforms have taken place within the energy space in South Africa including removal of the cap on embedded self-generation so that the private sector can scale private renewable power; establishment of a President-led energy transition campaign and subsequent restructuring of cabinet positions; and adoption of priorities to ensure a stable, greener grid is viable.
3. **Investor sentiment:** Eskom’s debt holders, especially the climate-oriented or net zero committed investors, may view the company as a risk and divest, given the company’s emissions intensity. Alternatively, new debt issuance might not be met positively by the market if the company is not addressing both its debt burden and its emissions.

Ninety One's engagement strategy therefore focuses on three spheres of engagement through which it aims to achieve its overarching objective:

1. **Direct Eskom discussions:** Ninety One continues to engage the company directly across all levels of management and on all issues relating to the Managed Phaseout plans, as well as governance and capability.
2. **Collaborative engagement:** via Ninety One's leadership role on Climate Action 100+ it has engaged with the company on behalf of several bondholders, as well as acted as a conduit for information for other investors that do not have direct access to the company. Ninety One has used this forum to amplify its engagement objectives.
3. **Policy and advocacy:** Ninety One consults and engages with a range of individuals, institutions, and initiatives that are collectively driving and supporting the countries' energy transition by:
  - a. Informing policy via discussions with key energy and finance players, including National Treasury, the Ministry of Electricity, and the Presidential Climate Commission on the Just Energy Transition Investment Plan;
  - b. Contributing to leading research on South Africa's Just Transition plan via consultation with the London School of Economics Just Transition Finance Lab;
  - c. Supporting local private sector initiatives, such as the National Business Initiative, which are driving the development of finance and policy roadmaps; and,
  - d. Bringing the case of South Africa to global climate finance discussions via its involvement in COP26, 27, and 28, among other climate forums.

Ninety One has been able to engage with the company in a nuanced and well-informed way, given its presence in South Africa and its understanding of the complexity of the environment in which it operates. This has allowed Ninety One to build a positive relationship as investor and investee, which it believes has been

the key to communication with the company during a challenging period, i.e., since the exit of Eskom's previous CEO, Andre de Ruyter, in 2022. Ninety One's positive relationship with the company has given it access to different operations within the business including Transmission, Generation, Management, and Treasury, which has equipped it to drive forward its engagement priorities with the right decision-makers in the company. Ninety One sees a part of its value in CA100+ being its ability to bridge the information gap that exists between Eskom and some of its international bondholders.

### Lessons learned

After years of engagement on policy, finance and transition, Ninety One has matured and refined its engagement strategy with Eskom. The company and context are especially complex and require a continuous iteration in its approach, as well as self-reflection on real progress being made to ensure the strategy remains effective and relevant.

There are three key changes Ninety One has made along the way:

1. Setting clearer engagement objectives so it can measure progress more effectively;
2. Being realistic about expectations and communicating these effectively to the company; and
3. Briefing other investors to create alignment in understanding of issues facing Eskom, to enable more effective engagement by all shareholders towards a viable transition, and avoiding duplication of effort.

### Some of the setbacks experienced

**Changes in Eskom's leadership:** On 21 December 2022, Eskom's CEO, Andre de Ruyter, resigned, citing a lack of political support for his turnaround of the company. His resignation sparked a series of other resignations and also highlighted major issues within and around the company with regard to corruption. One of the positions that became

vacant was the Head of the Just Transition Office. Ninety One is encouraged by the new CEO who stepped in in March 2024, and who subsequently called for a new Head of Renewable and Just Transition. After the leadership changes, Ninety One re-established relationships with general management and key leaders within the Treasury and general management of the company.

**Load shedding in South Africa:** In South Africa, energy access and availability override the climate crisis — Eskom struggled to “keep the lights on” due to failing power stations. Motivating the company to phase out coal power stations while there is a country-wide power availability crisis is not possible and so Ninety One has had to pivot its expectations to be more realistic, focusing instead on the phasing in of renewable power to one day supplement the coal power, rather than phase out coal power and risk the economy going into full darkness.

**Changes in CA100+ leadership:** In June 2024, Ninety One’s co-leads on Eskom CA100+ group withdrew from the industry initiative and Ninety One lost its engagement ally. While it was a disappointment, since then new asset owners joined the group, including StanLib. StanLib is a

well-respected South African asset manager that is knowledgeable and well connected in the country. This change comes with a renewed vigor for the engagement, with greater focus on pulling the local levers more effectively. For example, it opens up the opportunity to enhance existing relationships with key decision-makers, while opening up new opportunities for engagement with others that may not yet have been engaged with.

## Closing

The case of Eskom highlights the complexity and enormity of the ambition to shift a coal-dependent developing economy to a cleaner, greener future. It is also an actual case study of the potential for high-impact Transition Finance and what the issuance of such capital can do for the people, the planet, and profit. Financing Eskom and South Africa’s energy transition will require all types of capital to fund all parts of the system — from the phase out of coal, to the phase up of solutions, the support for communities, and the financing of reskilling. Ninety One is but one part of the financing and advocacy puzzle and it continues to proudly engage with the company and the broader system to make progress on this urgent agenda.

### BOX 9. CLIMATE ARC

TransitionArc is a one-stop tool to assess corporate transition activities and broader strategies, and unlock finance at the speed and at scale needed to meet climate goals. TransitionArc was developed by Climate Arc, a nonprofit, global organization shaping and driving forward the climate movement through unlocking private capital.

Understanding where a company is on the path to transition is complex, due to varying assessment frameworks, multiple ratings, and conflicting metrics. Financial institutions,

companies, and regulators are calling for clearer, science-aligned and more coherent corporate climate data and analysis to guide their work and drive capital to climate solutions. TransitionArc brings together the best transition data and analysis available on the market, filling a key gap in the climate finance ecosystem. It allows investment decisions to be made more effectively, accelerating the transition to a safer and more sustainable world.

Currently, TransitionArc covers 500+ companies (with a combined revenue of US\$ 13.2 trillion),

across seven sectors (airlines, auto, cement, electricity, oil and gas, shipping, steel), with many more companies and sectors being added in the coming months.

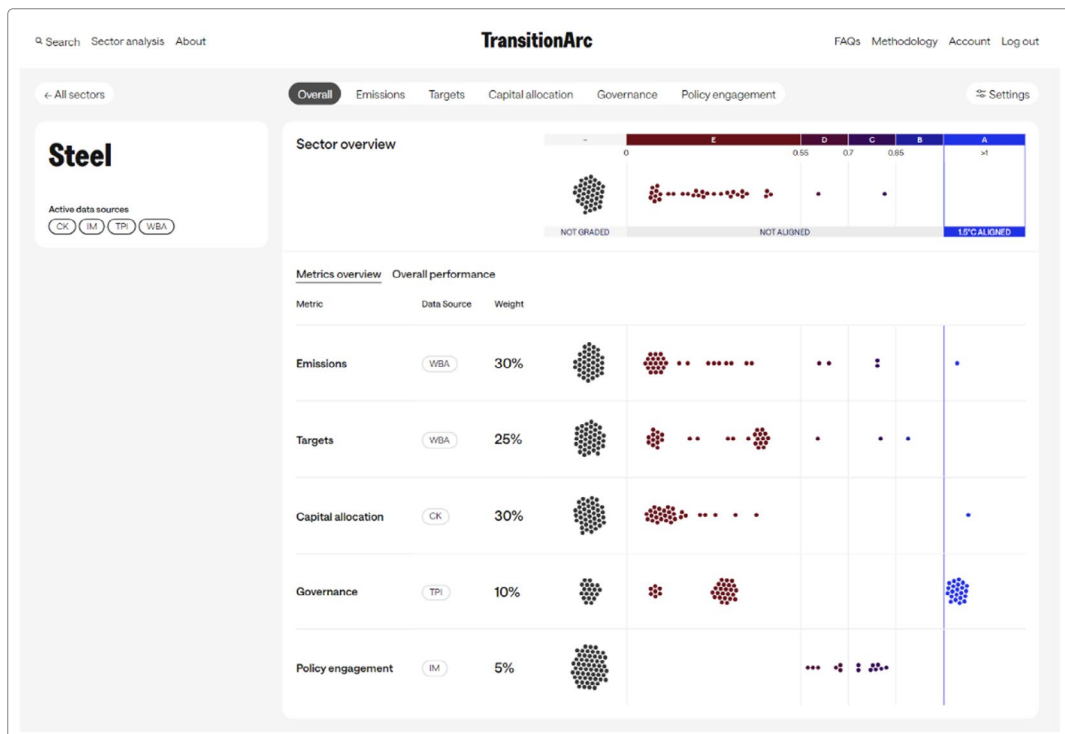
The public interface of TransitionArc is accessible free of charge by registering on [TransitionArc \(Beta\) \(climatearc.org\)](https://climatearc.org). There will be a paid-for model for profit-making organizations, such as financial institutions, that would like direct integration with the underlying data analysis.

TransitionArc was built by Climate Arc in close partnership with key players in the climate finance ecosystem and has been piloted by 40 financial institutions to ensure it is fit for purpose. It features world-leading data and

analysis from: Transition Pathway Initiative, World Benchmarking Alliance, CDP, Carbon Tracker Initiative, Corporate Knights, Global Canopy, InfluenceMap, the International Council on Clean Transportation, and Science Based Targets initiative.

TransitionArc was developed for financial decision-makers as a primary user, but it can be used to accelerate climate action across a range of levers, including corporate action, policy and regulation, and media. Financial institutions can use it to direct flows of capital to support corporate transitions. Companies can use the tool to see how they are being assessed by different ratings and to reinforce and promote the power of disclosure.

**Figure 22: Dashboard example sector view**

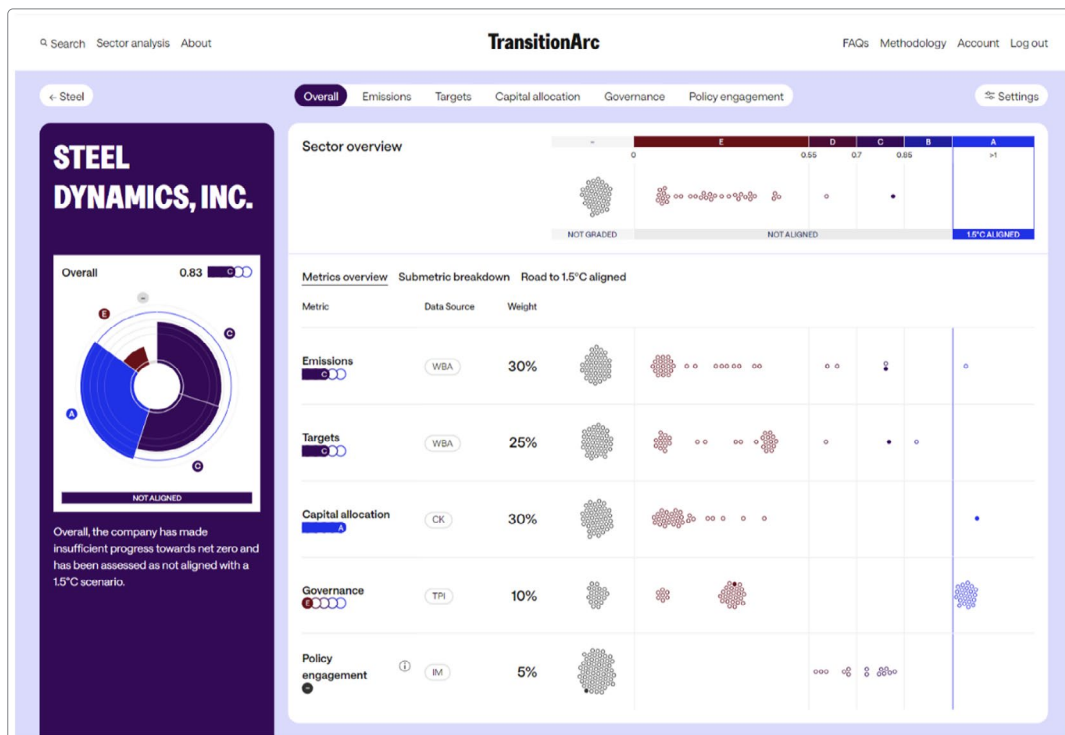


Source: TransitionArc

### Features of the tool

- TransitionArc allows companies to be assessed on five key metrics: GHG emissions performance, climate targets, capital allocation, governance, and policy engagement.
  - These metrics appear in all key transition frameworks and are relevant to all sectors for climate action.
- Companies are given an A-E score based on their alignment with a 1.5 degrees C pathway.
- Crucially, the tool turns negative ratings into constructive calls to action by providing guidance to companies on how they can improve their score.
- The tool is dynamic — users can interact with a suite of tools and trace back to source data.
- Currently, the data visualization shows: Sector Analysis view, a Compare Companies view, and an Individual Company view.
- The tool calculates each company’s distance from alignment with a 1.5 degrees C pathway and describes the actions needed to close these gaps (i.e., “what good looks like”).
- For every metric there are at least two sources. The sources are directly comparable and the tool shows why assessments may differ.

**Figure 23: Dashboard example company view**



Source: TransitionArc

### Lessons learned

- Transparency regarding calculations and sources is important so that benchmarks can be directly compared. The tool currently allows for such comparison, but TransitionArc partners is working on enhancing transparency regarding calculations and underlying sources.
- TransitionArc enables comparison between methods that are – by definition – different in approach. Because of this, it is important to set out the choices made. While it would be more straightforward to pick only one provider for each metric, optionality provides users with the ability to customize their selection based on the nature of their business needs.
- Underlying inconsistency issues with climate data remain. Sometimes, company-level data for a single company differs across different data sources. In an attempt to solve for this problem, the tool aims to reconcile company identifiers to ensure that companies are correctly matched across multiple data sources.

### Future developments

TransitionArc is constantly evolving to expand its coverage of data and analysis, and feature the best available insights into corporate transitions. This will continually increase its decision-usefulness for a range of stakeholders. For example, Climate Arc recently announced its partnership with XDI and Resilient Planet Finance Lab to explore how best to integrate analysis on physical risk and adaptation. Further planned developments include:

- Expansion to cover 2,000 companies by 2026
- Coverage of the following sectors will be added: aluminum, construction, food, and agriculture
- Integration of deforestation-related risk
- Assessment against localized pathways
- Alignment with additional transition frameworks
- Further guidance on how companies can improve their scores

### BOX 10. UN CLIMATE CHANGE HIGH-LEVEL CHAMPIONS

UN Climate Change High-Level Champions: [The Regional Platforms for Climate Projects' \(RPCP's\)](#) goal is to mobilize capital by curating climate projects and connecting financiers with project developers. With the RPCP, the Climate Champions have piloted the use of tagging

climate projects in developing countries with the relevant GFANZ Transition Finance strategies. The aim of the RPCP is to support financial institutions in evaluating relevant investment opportunities in developing countries.



## 12. NIPPON LIFE INSURANCE COMPANY (NIPPON LIFE)

**Sector:** Asset Owner/Insurance

**HQ Geography:** Japan (Asia)

**Firm Overview:** Nippon Life is the core company of the Nippon Life Group, which consists of multiple companies operating life insurance and asset management businesses in the Asia-Pacific region and globally, and is the largest private asset owner in Japan (US\$ 600 billion Total Assets and 15 million customer base). Nippon Life Group operates its life insurance business in eight countries outside of Japan, including the U.S., the U.K., Australia, India, Myanmar, China, Thailand, and Indonesia. With respect to Nippon Life's asset management business, the managed assets are made up of premiums paid by policyholders.

Nippon Life aims to achieve net zero in FY2050 and set interim targets for FY2030 (total emissions: 45% or more reduction compared to FY2010; intensity: 49% or more reduction compared to FY2020). Nippon Life participates in various initiatives, such as PRI and Net-Zero Asset Owner Alliance (NZAOA).

### STRATEGY

#### Overview of Nippon Life's approach to evaluating Transition Finance

In determining whether it will provide transition financing to a company, Nippon Life follows a four-step method, where the following are evaluated:

1. **Evaluation of alignment with the Paris Pathway** — Nippon Life considers whether the company's corporate- and asset-level transition plans (along with relevant supplementary documentation) are consistent with the Paris Agreement;
2. **Evaluation of detailed transition strategy** — Nippon Life considers whether the company has specific measures to achieve the ambitions described within its transition plan;
3. **Evaluation of investment plan** — Nippon Life considers whether the specific measures are financially feasible; and
4. **Evaluation of governance structure** — Nippon Life considers whether such transition plans and specific measures have been formulated and implemented with the commitment of the company's management.

These evaluations are a mechanism by which Nippon Life can assess the reliability and feasibility of the company's transition plan. Nippon Life has developed the structure and content of the four-step evaluation by referring to, and conforming with, ICMA and other international benchmarks.

#### Nippon Life's transition framework

Nippon Life released its "Nippon Life's Transition Framework" (Framework) on 11 June 2024, which provides detail on its Transition Finance strategy. The Framework is intended to provide companies with concrete direction and to support the decarbonization of high-emitting companies by clarifying what an appropriate Transition Finance strategy is using concrete evaluation criteria.

The Framework is one of the key initiatives of Nippon Life's net-zero transition plan, which was released on 28 March 2024. Nippon Life decided to focus on developing criteria for the Japanese electricity sector and the steel sector, which are particularly high GHG emitters and for which financial support for decarbonization is especially important.

Nippon Life developed the Framework based on the following five principles of its approach to transition finance:

1. Alignment with the Paris Agreement (Paris Pathway),
2. Technological neutrality,
3. Monitoring and dialogue,
4. Do No Significant Harm (DNSH), and
5. Just Transition.

Regarding principle 1, Nippon Life will conduct an assessment of whether a company's transition plan (along with supplementary documentation provided by the company) is in line with an internationally credible, science-based pathway that is consistent with the Paris Pathway primarily at the corporate-level. The assessment will also consider the asset or project level. With respect to the electricity sector, the applicable scope is Scope 1; with respect to the steel sector the applicable scopes are Scope 1 and Scope 2.

Regarding principle 2, as long as a company's transition plan is consistent with the Paris Pathway, Nippon Life will support a company's decarbonization activities, regardless of technologies used.

### Evaluation of alignment with the Paris Pathway (Principle 1)

First, Nippon Life evaluates and confirms whether a company's transition plan is aligned with the Paris Pathway. This evaluation is based on the information of corporate-level short-, medium-, and long-term GHG emissions reduction goals (2030, 2040, and 2050, respectively) and two criteria:

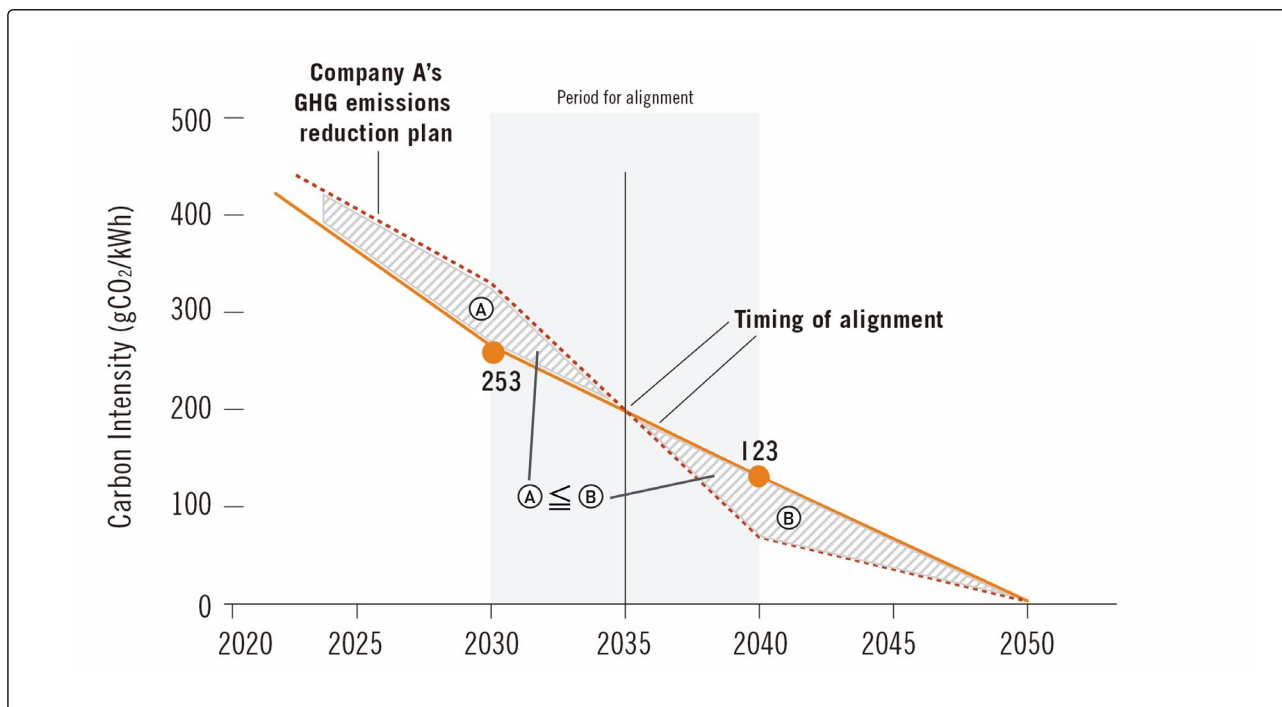
1. "Reference Curve", and
2. "Complementary Curve".

In principle, if a company's transition plan is equal to or below the Reference Curve, Nippon Life considers the company in alignment with the Paris Pathway. In addition, on the condition that the company will pursue alignment with the Reference Curve after making investments and loans, if the company's transition plan is equal to or below the Complementary Curve, Nippon Life considers the company to be in line with the Paris Pathway.<sup>45</sup>

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<sup>45</sup> To determine whether a company is below the reference values, Nippon Life will assess the company's GHG Emission intensity targets for 2030, 2040, and 2050 against the curve. If, during all periods, these projected intensities are lower than the reference values, Nippon Life will judge the company as alignment with the pathway. Even in the case where the planned intensity in 2030 is higher than the reference value, if beyond this point the planned intensity is expected to be below the curve and the cumulative emissions (integrated value) between the time of investment and 2050 are lower than that of the reference values, Nippon Life will consider the company's transition plan to be aligned with the Paris Pathway.

**Figure 24: An example of an evaluation of the alignment with a pathway**



Source: Nippon Life

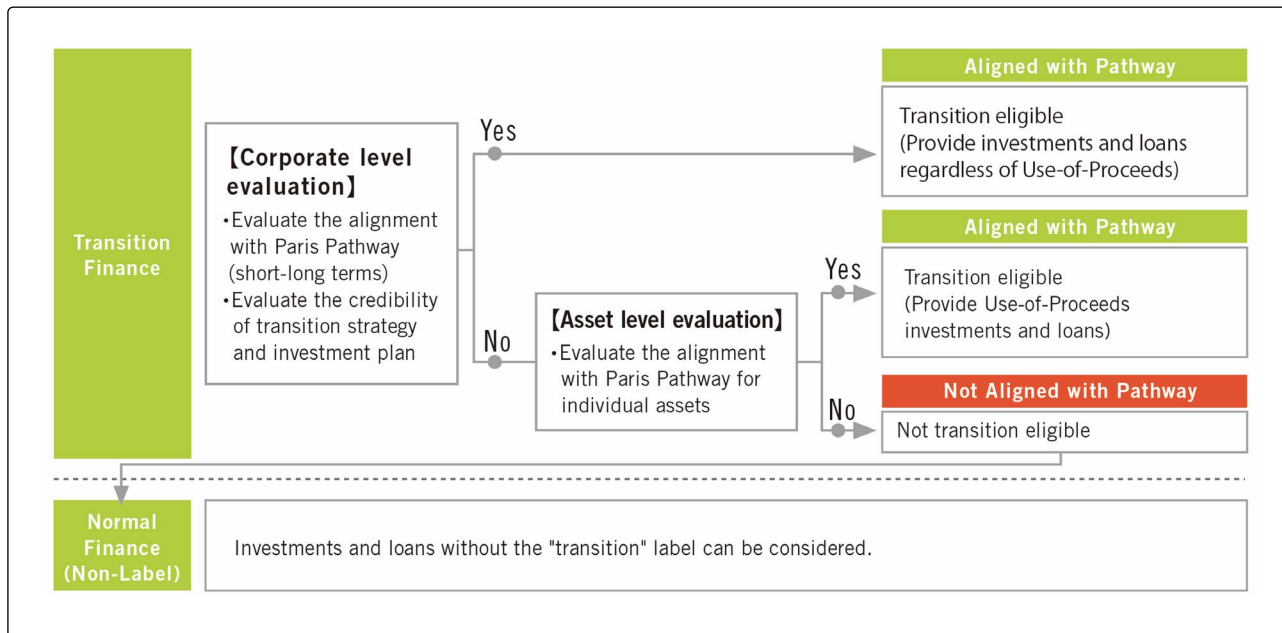
As noted, Nippon Life uses a “Reference Curve” and a “Complementary Curve” to evaluate the alignment with the Paris Pathway. For the electricity sector, the representative GHG emissions reduction curve (intensity basis) is based on the IEA NZE Scenario as the Reference Curve; and for Japan’s electricity sector, the representative GHG emissions reduction curve is based on the IEA Announced Pledges Scenario (APS) as the Complementary Curve.

For the steel sector, the representative GHG emissions reduction curve (intensity basis) is based on the TPI’s steel sector 1.5 degrees C pathway as the Reference Curve; the representative GHG emissions reduction curve (intensity basis) is based on the TPI’s steel sector Well below

2 degrees C pathway as the Complementary Curve. It is desirable to use criteria that take into account region-specific factors, but if there are no such criteria, Nippon Life uses global criteria instead.

For companies with transition plans that are not aligned with the Paris Pathway at the corporate-level, Nippon Life will evaluate the company on whether each “Use-of-Proceed” asset is aligned with the Paris Pathway. Furthermore, even in cases where a company is neither eligible for Transition Finance on a corporate-level nor at an asset-level, Nippon Life could still support the company’s decarbonization efforts through its non-label corporate investments and loans.

**Figure 25: Nippon Life’s two-level evaluation approach (corporate level evaluation followed by asset level evaluation)**



Source: Nippon Life

Nippon Life plans to track the total amount of its qualified Transition Finance and to carve out that amount from its investment portfolio.<sup>46</sup> Accordingly, the qualified Transition Finance will be regarded as out-of-scope of the interim GHG emissions reduction target. Since the GHG emissions associated with the qualified Transition Finance will not become constrained by this adjustment, Nippon Life gains more flexibility in providing finance to support the decarbonization efforts of high-emitting sectors.

Nippon Life evaluates a company’s transition strategy from the following four perspectives (to understand what kinds of specific measures compose the company’s transition plan):<sup>47</sup>

1. Alignment between the transition plan and the detailed transition strategy;
2. Rationales for a development and implementation roadmap for innovative technologies;
3. Validity of external environments that determine the key assumptions of the company’s detailed transition strategy; and
4. Considerations to the natural and social environment. Nippon Life considers whether elements of a just transition and mitigation measures for negative impacts on nature and biodiversity are incorporated into the detailed transition strategy.

46 This adjustment is based on the Target Setting Protocol (Fourth Edition) of Net Zero Asset Owner Alliance. According to T102. of the Protocol, dedicated “phase-out” strategies of high-emitting assets, aligned with no or limited overshoot 1.5 degrees C pathways, are supported by the Alliance.

47 This is the detailed explanation of how Nippon Life evaluates a company’s detailed transition strategy. Please see 2) in “Overview of Nippon Life’s approach to evaluating transition finance”.

## The Framework incorporates an Aligning strategy

Nippon Life conducts assessments on:

1. Whether a company's transition plan (along with relevant supplementary documentation provided by the company) is in line with an internationally credible, science-based pathway, which will be explained in detail below (Attribute A).
2. Scope 1 and 2 emissions-based KPIs of the company (Attribute B).
3. The company's net-zero transition plan and documents provided by the company (Attribute C).
4. The company's detailed strategy and investment plan (Attribute D).

After Nippon Life makes an investment in, or loan to, a company, it conducts yearly checks on deviation between the company's transition plan (along with relevant supplementary documentation provided by the company) and the actual progress. Where there is a deviation and Nippon Life believes it will be difficult for the company to get back on the track set in the existing plan, it will ask the company to create a revised plan that is aligned with the Paris Pathway. If it becomes apparent that the company cannot develop a revised plan, Nippon Life may reclassify the financing as "normal financing" rather than qualifying as Transition Finance. As mentioned above, Nippon Life plans to carve out the amount of qualified Transition Finance from its investment portfolio. If, however, some portion of its previously qualified Transition Finance is reclassified as normal financing, the amount will be transferred back to the investment portfolio (Attribute E).

## The Framework incorporates a Managed Phaseout strategy

Nippon Life's Framework can also be used for investments that fall under Managed Phaseout. For example, a company that produces electricity might consider early retirement of its coal-fired power

plants in an effort to decarbonize its operations. If the company's Managed Phaseout plan is included in its net-zero transition plan, Transition Finance related to the Managed Phaseout of the plant, which qualifies under the Framework, is likely to satisfy all the Attributes for Managed Phaseout.

## Investment types covered by the Framework

Nippon Life uses the Framework when it considers four types of financial instruments:

1. Corporate loans and bond investments (general corporate purpose);
2. Sustainability-linked loans and bond investments (general corporate purpose);
3. Use-of-Proceeds type corporate loans and bond investments; and
4. Project finance.

However, Nippon Life can also use the Framework when it considers equity instruments (stocks, preferred equity etc.).

## Description of Transition Financing strategy progress

Nippon Life released the [Framework](#) on 11 June 2024. The implementation/execution process is yet to come.

Nippon Life has not set a specific targeted amount of capital to be mobilized under the Framework, but it has set a target of JPY 3 trillion (FY2017-FY2030) for the decarbonization financing facility. The decarbonization financing facility applies to green bonds/loans; renewable energy-related project finance; transition-and innovation-related finance; and other finances (i.e., green building loans). As of the end of December 2023, Nippon Life has invested approximately JPY 1.7 trillion in the decarbonization financing facility. If the demand for the Transition Finance exceeds the decarbonization financing facility target, Nippon Life is willing to provide finance beyond the JPY 3 trillion, so long as the investments meet credit risk criteria.

## Lessons learned

As mentioned above, Nippon Life applies the Framework to the electricity sector and the steel sector, but it may expand application of the Framework to other sectors, as necessary, in the future. One of the objectives of the Framework is to clarify and demonstrate the quantified criteria based on a scientific perspective for assessing the conformity with the Paris Pathway; however, it has been challenging to find reliable data against which such assessment can be made.

Nippon Life decided to carve out the qualified Transition Finance from its investment portfolio, but it acknowledges that there is no one-size-fits-all approach when planning the strategy for Transition Finance. Nippon Life developed a unique approach to accelerate the decarbonization of the electricity sector and the steel sector in Japan.

In the process toward global net zero, the targets and required pathways are expected to change from time-to-time, depending on the progress of each country. Nippon Life plans to review and revise the Framework as necessary in accordance with updates of nationally determined contributions (NDC) by the Japanese government, as well as the 1.5 degrees C scenarios of IPCC, IEA, and others, or based on trends in international discussions on Transition Finance.

## 13. PHOENIX GROUP

**Sector:** Asset Owner

**HQ Geography:** UK

**Firm Overview:** Phoenix Group is the UK's largest long-term savings and retirement business with about GBP 280 billion of assets under administration.

As life expectancy continues to increase and the pension landscape continues to shift, Phoenix Group offers its 12 million customers a broad range of pensions, savings, and life insurance products across its family of brands, which include Standard Life, SunLife, Phoenix Life, and ReAssure. Phoenix Group's purpose is to help people secure a life of possibilities through helping its customers on their journey to and through retirement, providing the right support at the right time.

Phoenix Group is a FTSE 100 company that is included in the FTSE100 ESG Select Index series. In 2023 Phoenix Group set out its net-zero transition plan. Its investment portfolio contributes over 99% of the Group's carbon footprint for which an interim target of a 50% reduction in the carbon emissions intensity of about GBP 250 billion by 2030 has been set, as it progresses toward its portfolios being net zero carbon by 2050 or sooner. Phoenix Group committed to its operations being net zero carbon by 2025 and net zero in its supply chain by 2050, with an interim reduction target of at least 50% by 2030. Phoenix Group is a signatory to the Net-Zero Asset Owners Alliance (NZAOA).

### STRATEGY

#### Phoenix Group's Transition Finance strategy

As set out in its Net Zero Transition Plan, Phoenix Group is committed to becoming a net zero business by 2050 and has set interim targets for 2025 and 2030. Within the "Invest" pillar of its strategy to achieve this, effective stewardship of assets and investing in Climate Solutions are key levers alongside decarbonizing its portfolio.

For effective stewardship of its assets, Phoenix Group [expects companies](#) to provide robust disclosure and evidence [regarding climate change management and action](#) across the pillars of the TCFD framework. Through its in-house stewardship team, Phoenix Group undertakes direct engagement with 25 priority investee companies, which account for 40% of its financed emissions in material sectors. In addition, through

its asset management partners, it undertakes delegated engagement with a larger number of investee companies.

For investing in Climate Solutions, Phoenix Group worked with third parties to create a classification framework that helps guide its investment decisions in private markets. The framework primarily draws upon the EU Taxonomy coupled with insights from regulatory/legal bodies, ESG/sustainability standards and regulations, and the broker-dealer ecosystem.

The framework is used to identify, assess, and execute on sustainable investments (including Climate Solutions) in the sectors that will be key to driving the transition to net zero by 2050. Phoenix Group set a strategic target of achieving 50%-70% of illiquid assets originations in the shareholder portfolio in sustainable or transition assets. It achieved this target in 2023 having originated

about GBP 1.19 billion in sustainable or transition assets which, in turn, accounted for about 87% of the overall shareholder illiquid origination.

Phoenix Group has a longer-term ambition to invest up to GBP 40 billion in sustainable, transition, or productive assets — subject to overcoming a range of barriers, and in line with commercial objectives and delivering good customer outcomes. The GBP 40 billion covers Climate Solutions investments, social investments, and other investments aligned with its Sustainable and Transition Finance Frameworks, as well as a UK-focused investment area of “productive assets”.

**REAL-ECONOMY TRANSACTION**

Climate Solutions

Aligning

**NS Groep**

**Sector:** Transport and Logistics

**HQ Geography and Key Markets:**

Netherlands (HQ), the UK, Belgium, France, Ireland, and Germany

**Asset Class:** Private credit

**Amount of Capital Committed and/or**

**Deployed:** EUR 50 million

**Investment Horizon/Duration Contract**

**Period:** 9 years

The NS Groep transaction is part of Phoenix Group’s GBP 600 million in shareholder capital in Climate Solutions in 2023 and demonstrates effective stewardship of assets through integrating ESG issues into Phoenix Group’s investment decisions.

NS Groep plays an essential role in the Dutch state’s mission to tackle climate change. The company provides climate-neutral transport options that

include travel by train, public transport, bicycles, and train replacement bus services. All NS Groep trains are electric and their emissions footprint has been reduced to zero, given NS Groep’s green power purchasing policy (i.e., energy is provided by wind farms). In 2022, for example, about 93% of the electricity NS Groep purchased was used to run its trains it operates and the remaining 7% was used for operating stations, offices, and workshops.

NS Groep aspires to achieve full circularity in terms of procurement, maximum reuse of materials, and zero waste in offices and workshops and from trains.

In addition, providing funding to NS Groep also fits into Phoenix Group’s broader engagement strategy.

Across the Phoenix investment portfolio, the firm’s engagement strategy is anchored on a two-way interaction between the investor and investees. The goal of the engagement is to influence issuers’ practices when needed to unlock value in both corporate business and ESG strategies. Additionally, Phoenix Group supports the view that engagement and ESG integration are interlinked and, when relevant for a specific strategy, they should be intrinsic parts of the investment decision-making process.

For all private market investments (including the NS Groep transaction), Phoenix Group conducts ESG due diligence alongside its asset managers to inform its view of ESG classification as well as ESG risks and opportunities as part of the overall transaction approval process. Following the execution of the transaction in April 2023, Phoenix and abrdn have stayed connected to NS Groep to monitor and support various business developments. This has helped deepen the relationship across the three parties further.



### **Climate Solutions strategy**

The NS Groep transaction underscores Phoenix Group's support to Climate Solutions — as is the case with NS Groep's electric trains (a zero-carbon alternative to passenger mobility) and efforts to reduce its emissions and achieve full circularity. Phoenix plans to expand its illiquid book to support Phoenix's Bulk Purchase Annuity (BPA) growth ambitions, and to continue to invest in defensive, regulated assets providing essential services.

### **Lessons learned**

Since execution of the funding agreement there has been a concerted effort from NS Groep, abrdn, and Phoenix Group to stay closely connected and follow the key developments on the concessions by the Dutch government for the main rail network between 2023 and 2035.

### **Outcomes**

As a result of staying closely connected following the transaction to monitor and support various business development efforts, NS Groep, abrdn and Phoenix Group have further deepened their relationship.

In December 2023 NS Groep was officially awarded the concession for the main rail network by the Dutch Ministry of Infrastructure and Water Management, which means train passengers are assured of a sustainable train journey and the Netherlands will retain a strong rail network. The concession takes effect in 2025.

## 14. RESPONSIBLE ALPHA

**Sector:** Consulting

**HQ Geography:** Global

**Firm Overview:** Responsible Alpha is a leading minority-owned, sustainability consultancy specializing in sustainable finance and sustainable transition strategies, merging 120 years of global experience with local expertise. Responsible Alpha advises institutions on their transition to a net-zero, sustainable, equitable, and nature positive world. Advised by its global board of directors, Responsible Alpha is a Delaware registered Public Benefit Corporation owned by its staff, advisors, and board members. Responsible Alpha operates internationally from Vienna, Washington DC, and Boston. Its expert team is comprised of scientists, financial professionals, and communications experts that offer insights and guidance in navigating the complexities of sustainability solutions.

Responsible Alpha is a member of the Net Zero Financial Service Providers Alliance (NZFSPA). The NZFSPA is a group of leading institutions committed to supporting the goal of global net zero greenhouse gas emissions by 2050 or sooner, limiting global temperature increase to 1.5 degrees C above pre-industrial levels. To date, Responsible Alpha has advised on limiting global temperature increase to 1.5 degrees C above pre-industrial levels for over US\$ 473 million in fixed income, equity, and banking transactions.

### STRATEGY

#### Responsible Alpha as a solution for capacity building gaps

One of the main goals of capacity building in the climate space is to develop talent such that a company's employees become capable of leading the organization toward becoming industry leaders in sustainability across diverse geographies and business lines, if applicable. Responsible Alpha has previously developed an extensive educational course tailored to delve deep into transition strategies for achieving a low-carbon, sustainable, and equitable future.

Depending on the nature of the Transition Finance strategy of the firm, Responsible Alpha can customize its training approach. In some cases, it can support knowledge sharing to empower the GFANZ four key transition financing strategies and how these strategies sit within broader climate, ESG, and sustainability strategies. Through hands-on exercises and real-world case studies, participants are able to develop a nuanced understanding of how to identify, assess, and mitigate climate risks while aligning their strategies with global reporting standards and evolving regulatory landscapes.

Such a course can empower participants to integrate transition strategies into their daily work routines. Based on Responsible Alpha's previous work for various clients, capacity building content may cover topics such as:

- Calculating scenario analysis according to decarbonization pathways based on rigorous scientific models;
- Modeling fixed income, lending, and equity climate valuation;
- Determining annual climate physical and transition risks facing long-tenured fixed income securities and translating these risks into risks to principal;
- Integrating climate risk into financial accounting statements;
- Applying climate modeling tools including IAMs, SSPs, and RCPs;
- Advising asset managers and banks on options for climate risk integration; or
- Understanding best practices for the application of Nature-based Solutions.

#### BOX 11. ROCKY MOUNTAIN INSTITUTE (RMI)

The [Transition Finance Resource Hub](#) by RMI is an educational resource to provide more clarity and upskill practitioners on Transition Finance. The Hub includes practical guidance, introductory videos, insights on frequently asked questions, and case studies, as well as market-leading frameworks, taxonomies, reports, and media coverage.

#### BOX 12. GLOBAL CAPACITY BUILDING COALITION (GCBC)

[GCBC](#) launched at COP28 with the support of the multilateral development banks (MDBs), UN agencies, global networks such as ISSB, NGFS, Finance in Common, and GFANZ, as well as the support of the G20 SFWG and G20 Blended Finance Alliance. The Coalition brings together some of the world's leading climate finance organizations to:

- Respond to growing requests for climate capacity-building support from financial institutions in emerging markets and developing economies (EMDEs) across climate finance topics;
- Enhance collaboration among capacity building designers, providers, and funders and reduce fragmented approaches to technical assistance; and,
- Significantly increase the availability, accessibility, and effectiveness of climate finance technical assistance programs for financial institutions in EMDEs.

GCBC is currently focused on building out a beta version of an online platform that brings together a knowledge hub of best practice learning materials; case studies on project financing; pipeline development and transition finance; events and learning opportunities. The platform will enable user feedback and requests for specific resources, translation, and user analytics. The beta platform will be launched at New York Climate Week with the founding participants, for a 90-day consultation.

## 15. ROYAL BANK OF CANADA (RBC)

**Sector:** Bank

**HQ Geography:** Canada

**Firm Overview:** Royal Bank of Canada (RBC) is a global financial institution with a purpose-driven, principles-led approach to delivering leading performance. As Canada's biggest bank and one of the largest in the world, based on market capitalization, RBC has a diversified business model with a focus on innovation and providing its services to more than 18 million clients in Canada, the US, and 27 other countries.

RBC is committed to achieving net zero in its lending by 2050 and is a member of the Net Zero Banking Alliance (NZBA). It has a goal to triple its lending to renewable energy across Capital Markets and Commercial Banking lines and grow overall low-carbon energy lending to CAD 35 billion by 2030.<sup>48</sup> It also has a goal to allocate CAD 1 billion by 2030 to support the development and scaling of innovative Climate Solutions.<sup>49</sup>

48 The low-carbon energy lending goal and exposures are measured on an authorized lending basis, to reflect RBC's total lending commitment. Low-carbon energy activities include the construction, development, operation, acquisition, maintenance, and connection of: renewable energy sources (e.g., solar, wind); other low-carbon energy sources (e.g., nuclear and hydrogen) as well as electricity transmission and distribution systems; energy storage devices (e.g., batteries); and efficiency improvements (e.g., smart grids). For details on the eligibility criteria refer to RBC's Sustainable Finance Framework. For clients of its Capital Markets line of business that are power generators with more than one energy source, RBC allocates authorized lending exposure on a pro-rata basis as a share of generation type based on revenue or an available proxy.

49 For purposes of identifying and tracking investment commitments eligible to count towards this goal and disclosing progress towards this goal, RBC includes in climate solutions products and services that help mitigate the impacts of climate change and/or support the transition to net-zero. While its approach may evolve over time, it intends to prioritize allocating capital toward solutions that will lead to GHG emissions reductions in Canada and globally. Its investment commitments eligible to count towards this goal may also include support for solutions with outcomes linked to biodiversity, nature, and/or adaptation, among others, such as those described in RBC's Sustainable Finance Framework. RBC aspires to achieve this goal by 2030; however, market conditions and other factors — many of which are beyond its control and the effects of which can be difficult to predict — could impact its ability to invest capital to advance climate solutions over this timeframe.

### STRATEGY

*This case study is based on information contained in Royal Bank of Canada's Client Engagement Approach on Climate: Energy Sector released in October 2023 and in the RBC Climate Report 2023 released in March 2024.*

#### Why client engagement is key to RBC's climate strategy

The global transition to net-zero is underway as increasing focus is placed on addressing climate change and its impacts. This presents an opportunity for innovation and growth. To be successful, this transition requires governments,

policy makers, businesses, and industry to collaborate and take meaningful action.

RBC believes that its continued success as a bank depends on how effectively it supports clients to thrive and prosper in the new economy of the future. That belief is central to RBC's commitment to achieve net-zero in its lending by 2050.

RBC's initial focus has been on the highest-emitting sectors where it can have the greatest impact in supporting clients to reduce their emissions. Setting initial 2030 interim emissions reduction

targets (interim targets) for oil and gas and power generation (the energy sector) was an important and necessary step for RBC to make progress on its net-zero commitment.<sup>50</sup> To achieve these interim targets, RBC is focusing on both the growth of low-carbon energy sources and the decarbonization of conventional energy.

RBC believes that engaging with clients to deepen support in connection with their transition plans is the most impactful contribution RBC can make to help clients build strategic resilience and accelerate the shift to a net-zero economy. This engagement allows RBC to understand client transition plans and how RBC can best support them, while prioritizing capital toward clients that are executing on — or working toward — robust transition plans.

In 2023 RBC Capital Markets formalized its Client Engagement Approach on Climate — Energy Sector (CEAC). The CEAC includes a transition readiness framework — a tool to assess energy sector client transition plans — coupled with support for clients on their transition journeys. The objective is to help clients accelerate their transition plans and progress their standing within the transition readiness framework.

The clients in scope for the CEAC and described here are RBC Capital Markets clients that fall within the scope of RBC's interim targets for the oil and gas and power generation sectors. RBC Capital Markets serves the largest clients in these sectors and the CEAC reflects the approach that has been formalized for this business segment.<sup>51</sup>

## What shaped the Client Engagement Approach

1. **Business context:** As a large bank headquartered in a major energy producing and exporting economy, RBC has a history of financing the energy needed for economic growth. As it positions its business for the future, RBC is looking to address both the growth of low-carbon energy sources and the decarbonization of conventional energy. The CEAC is designed to help it advance both these objectives simultaneously.
2. **Industry guidance and methodologies:** The work on transition planning done by bodies such as GFANZ and CA100+ provided an important starting point for RBC. Guidance and methodologies from these bodies provided a foundation for the transition readiness framework as RBC considered which specific components of transition plans it should focus its assessment on. One consideration for RBC as it leveraged the GFANZ Transition Plan Guidance was including criteria addressing each of the five elements of a transition plan from Foundations through Governance.
3. **Client realities:** RBC adapted existing guidance and frameworks to reflect client realities and the practicalities of implementation of their transition plans. For example, RBC Capital Markets developed a maturity scale (maturity bands) as part of the transition readiness framework, recognizing that transition planning is a journey and some clients will be further along than others. RBC Capital Markets also calibrated the transition readiness framework so that the criteria for each band of the maturity scale reflects the regional, business, technological, regulatory, and public policy environments that its clients operate in. Through this adaptation process, RBC engaged with key civil society partners to pressure test its thinking. See Figure 26 below for details on the transition readiness framework design principles.

<sup>50</sup> In addition to its interim target for the automotive sector.

<sup>51</sup> Additional details on the scope of the clients covered by the CEAC can be found in: [Client Engagement Approach on Climate: Energy Sector](#).

4. **Initial iteration:** Initial anecdotal feedback has been largely positive. Many clients expressed appreciation for the transparency and clarity of RBC’s expectations related to climate and other stakeholder groups appreciated the detailed information on how RBC is thinking about the transition and its climate strategy. RBC sees this work as a first iteration that will need to evolve. It is seeking feedback from clients and stakeholders to understand how it can improve the effectiveness of the CEAC. RBC also recognizes that it will need to update its approach to reflect evolving sectoral realities, market factors, industry standards, and regulations.

**Figure 26: Framework design principles**

### FRAMEWORK DESIGN PRINCIPLES

- ✓ **Based on guidance and methodologies** from the Glasgow Financial Alliance for Net Zero (GFANZ) and Climate Action 100+ on transition planning.<sup>52, 53</sup> RBC consulted with civil society partners with expertise in climate transition planning when adapting this guidance for the Framework.<sup>54</sup>
- ✓ **Informed by client realities** such that the criteria for each band of the maturity scale reflect the regional, business, technological, regulatory and public policy environment that clients operate in.
- ✓ **Simple and transparent** to enable client understanding and practical to implement for RBC Capital Markets’ frontline business teams.
- ✓ **Informed by the shifts that could be required** to achieve the 1.5°C goal of the Paris Agreement, based on the IEA NZE scenario — which is a scenario commonly used by the financial sector to assess alignment with the 1.5°C goal of the Paris Agreement and is referenced in the Net Zero Banking Alliance Guidelines for Climate Target Setting.
- ✓ **Dynamic with the intention to increase ambition over time.** As the energy transition advances, RBC Capital Markets expects the robustness of clients’ transition plans to increase over time.<sup>55</sup>
- ✓ **Decision-useful** and intended to yield actionable insights by focusing on how clients are managing climate-related risk and opportunity.

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52 Expectations for Real-economy Transition Plans, GFANZ.

53 Net Zero Company Benchmark, CA100+.

54 This adaptation included determining the bank’s views on what it considers the most salient aspects of a credible transition plan. A consideration during adaptation was to aim to include criteria from across the broad categories of criteria available in the GFANZ and CA100+ guidance.

55 For example, what is considered “Intermediate” in this iteration may be considered “Emerging” in future iterations of the Framework.

Source: Royal Bank of Canada, *Client Engagement Approach on Climate: Energy Sector*

## DETAILS OF THE CLIENT ENGAGEMENT APPROACH

The Client Engagement Approach consists of two steps, as illustrated in Figure 27 below:

**Figure 27: Client Engagement Approach steps**

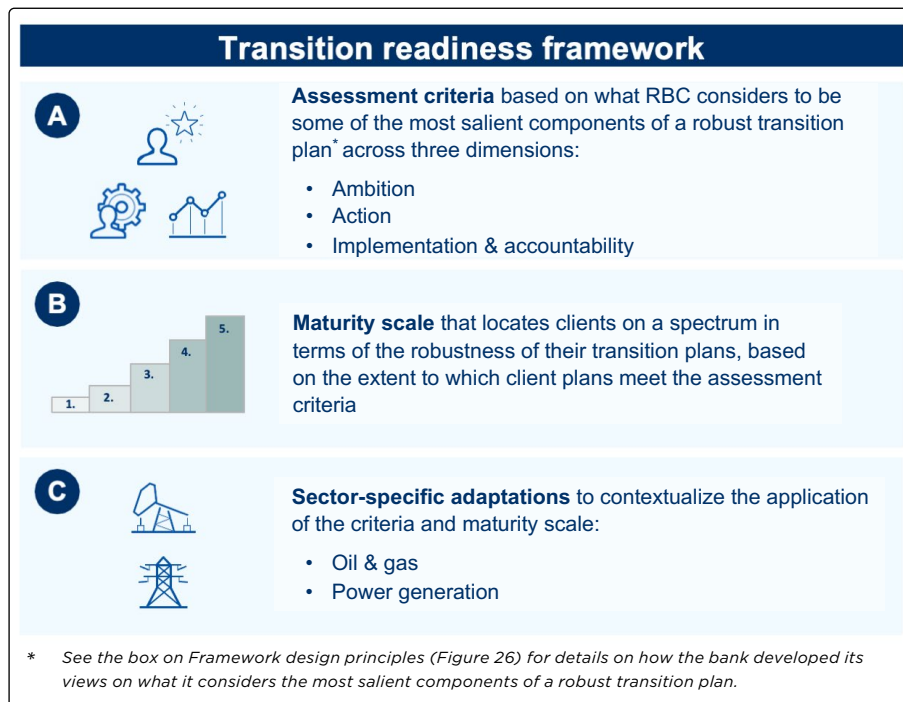


Source: Royal Bank of Canada, Client Engagement Approach on Climate: Energy Sector

### 1. Assess

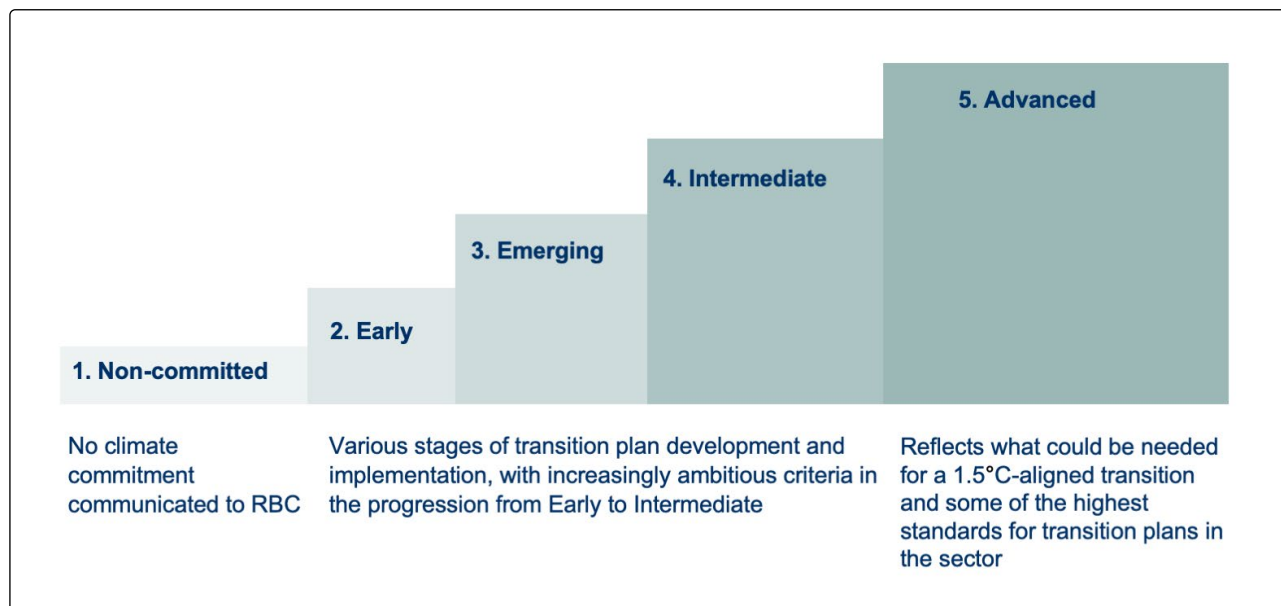
RBC Capital Markets applies the transition readiness framework when assessing energy sector client transition plans. As shown in Figure 28, the framework has three components for assessing client transition plans:

**Figure 28: Transition readiness framework**



Source: Royal Bank of Canada, Client Engagement Approach on Climate: Energy Sector

**Figure 29: Transition readiness framework – RBC Maturity bands**



Source: Royal Bank of Canada, Client Engagement Approach on Climate: Energy Sector

The transition readiness framework is designed to help RBC locate clients across a spectrum (maturity bands, as shown in Figure 29) in terms of the robustness of their transition plans. This allows RBC to better support clients to accelerate their transition plans and progress along the maturity scale.

While the bands that compose the maturity scale are consistent for the oil and gas and power generation sectors, the criteria for each band are adapted to reflect the context unique to different sectors. For example, RBC Capital Markets clients in the power generation sector that qualify for the Advanced band are committed to achieving net-zero by 2035, while RBC Capital Markets oil and gas clients that qualify for the Advanced band are committed to achieving net-zero by 2050.

The Advanced band of the maturity scale reflects what could be needed for a 1.5 degrees C aligned transition (drawing on resources such as the International Energy Agency Net Zero Emissions 2050 scenario) and some of the highest standards for transition plans in a given sector. RBC worked

with its business teams and civil society partners in thinking through the gradation of criteria across the other bands. RBC Capital Markets expects clients' transition plans to accelerate and become more robust over time and it plans to update the maturity bands to help reflect this.

## 2. Respond

With respect to the Respond step of the CEAC, RBC Capital Markets is using the insights from the assessment of client transition plans to help determine ways of deepening support for clients and to inform its business decision-making.

### Provide support and finance decarbonization

RBC Capital Markets is prioritizing supporting clients that are actively engaged in the energy transition and executing — or working toward — robust transition plans that will help them remain resilient and competitive. The insights gained by engaging with clients helps RBC Capital Markets understand where it can provide the most effective support to clients — this includes providing debt

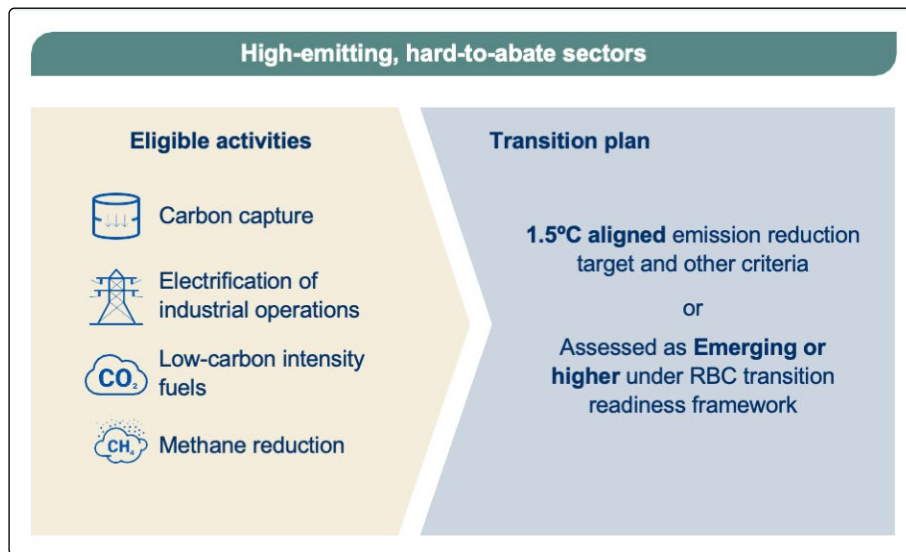


and equity underwriting and advisory services to support the energy transition; and financing energy transition projects, such as renewable energy.

To further enhance its support for decarbonization activities, RBC established a decarbonization finance category in its Sustainable Finance Framework that guides the allocation of capital toward emissions reduction efforts in high-emitting, hard-to-abate sectors. RBC believes the decarbonization categorization can be particularly helpful in the absence of a national or regional sustainable finance taxonomy that reflects the economic realities and business opportunities in its main markets.

In establishing the parameters of the decarbonization category, RBC was mindful of guarding against risks such as supporting activities that do not make a meaningful contribution to a client’s transition plan. As highlighted in Figure 30, eligibility under the decarbonization category in RBC’s Sustainable Finance Framework is based on two elements: the activity being an eligible decarbonization activity, and the client having a sufficiently robust transition plan. When developing the list of eligible activities, RBC considered both cross-sectoral opportunities (e.g., electrification of industrial operations) and opportunities that are more specific to a few select sectors (e.g., methane reduction). RBC anticipates this list will evolve as it considers additional opportunities in this space.

**Figure 30: RBC’s approach to decarbonization finance**



Source: Royal Bank of Canada, Climate Report 2023

The assessments carried out using the transition readiness framework are an important enabler of RBC’s approach to decarbonization finance — the assessments provide a means of gauging the robustness of client transition plans in a manner that reflects the clients’ business realities and operating context.

While some approaches to transition finance anchor strongly on the client having established emissions reduction targets that are 1.5 degrees C aligned, for many of RBC’s clients in high-emitting, hard-to-abate sectors such approaches can be overly restrictive (see Figures 31 and 32 below). RBC believes there is a need to support its clients

to decarbonize their production today while exploring new growth opportunities in low-carbon energy. As a result, RBC's eligibility criteria for decarbonization finance can rely on an assessment of the client's transition plan under the transition readiness framework for the sector and can still be considered eligible without 1.5 degrees C-aligned emissions reduction targets. This allows RBC to take a nuanced approach that recognizes the ambition of 1.5 degrees C in the Advanced band while continuing to provide decarbonization finance and meeting the need to support decarbonization activities today. This pragmatic approach recognizes the need to make urgent progress on decarbonization while the broader economic transformation required to achieve 1.5 degrees C alignment continues to unfold. Similar to the CEAC, the decarbonization category in the Sustainable Finance Framework is an initial iteration that will likely evolve.

### **Integrate into business decision-making**

RBC believes that clients that are proactively planning for the energy transition are better positioned to respond to associated emerging climate-related risks and opportunities. Given this, client transition plans are an important consideration in RBC Capital Markets' business decision-making.

RBC Capital Markets uses climate-related information — including from the assessment of client transition plans — as an input when prioritizing transactions to bring forward for approval to the RBC Capital Markets Business Committee. This committee considers climate-related information in the transaction risk assessment as part of the standard submission for in-scope transactions.

The insights gained through the CEAC also support progress toward RBC's interim targets and the management of climate-related risks. For example, it allows RBC Capital Markets to consider whether the client's plans and targets would be supportive of RBC's 2030 interim targets. The results from the initial assessment are also shaping RBC Capital Markets' engagement priorities with clients going forward (see below).

RBC Capital Markets considers clients in the Non-committed band of the maturity scale to be at particular risk of facing significant challenges in making appropriate adjustments to their operations and ultimately maintaining or improving their financial performance. RBC Capital Markets is prepared to make difficult business decisions and ultimately step away if a client, after repeated engagement, does not demonstrate sufficient planning for the energy transition. On a case-by-case basis, and considered alongside other financial and non-financial factors, this could include reducing or eliminating available credit and other products and services.<sup>56</sup>

<sup>56</sup> At the time of credit origination, renewal, or requests for increases in credit. RBC will not renege on legally binding credit agreements.

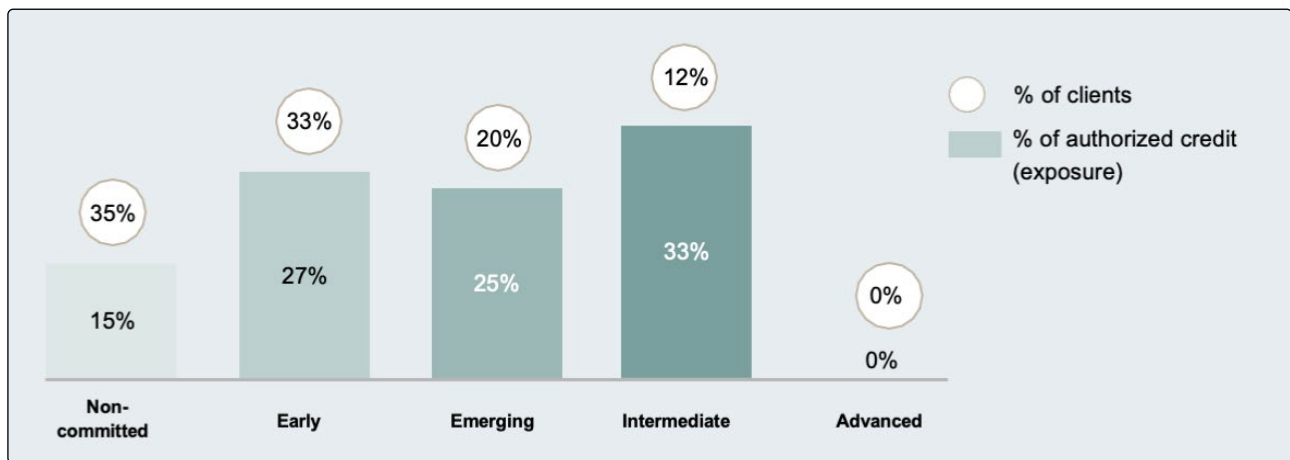
### Insights and engagement priorities going forward

The results of its initial assessment of client transition plans provide a strong basis from which to deliver on RBC Capital Markets’ approach of prioritizing the allocation of capital to clients that are executing on — or working toward — robust transition plans. The results also help identify opportunities to lean-in and to provide support. For example:

- 79% of exposure is to clients that have established transition plans, i.e., assessed as falling within the Early or higher maturity band.<sup>57, 58</sup>
- Nearly 48% of exposure is to clients with plans beyond the minimum criteria, i.e., assessed as falling in the Emerging or higher maturity band.
- Clients that have not yet established transition plans are generally smaller, private clients to whom RBC’s exposure tends to be lower.

RBC also confirmed that establishing plans that are 1.5 degrees C aligned is a key challenge — currently, only 2% of its exposure to oil and gas sector clients and 34% of its exposure to clients in the power generation sector have 1.5 degrees C aligned transition plans. Oil and gas sector clients do not typically have a clear path to achieving the magnitude and speed of reductions implied by this criterion. In the power generation sector, many clients face regulatory, reliability, and affordability considerations that limit their ability to shift their power generation mix toward renewables and other low-carbon energy sources at a pace required for 1.5 degrees C alignment.

**Figure 31: Initial results for oil and gas sector clients assessed using the transition readiness framework,<sup>59</sup> as at 31 October 2023**



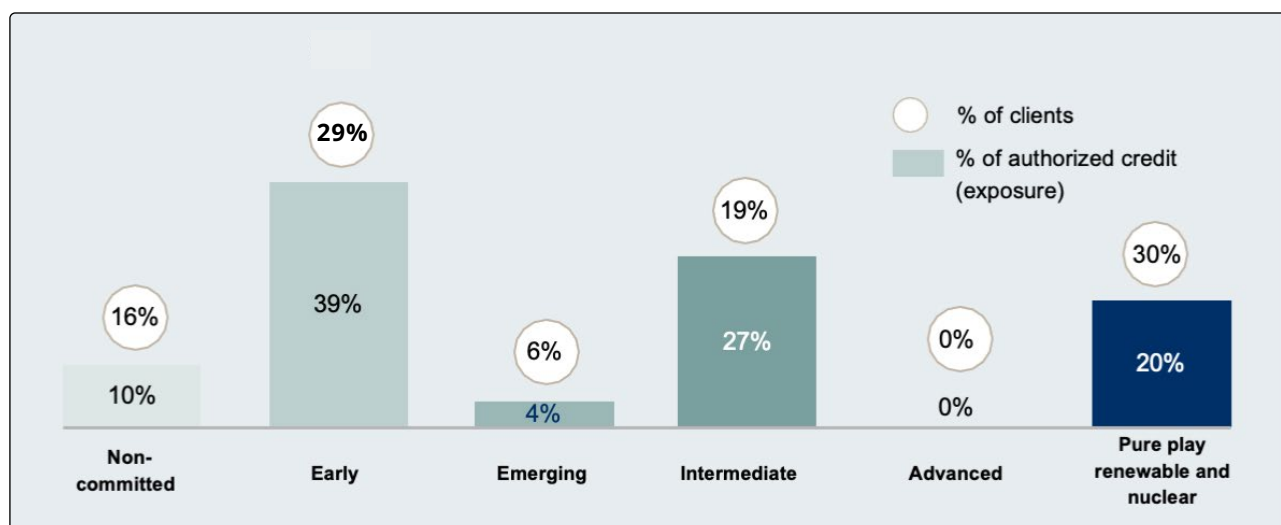
Source: Royal Bank of Canada, Climate Report 2023

57 Exposure is defined as lending on an authorized basis as at October 31, 2023. Authorized exposures, or exposures measured on an authorized basis, reflects the total lending commitment. RBC refers to authorized exposures because it is a more stable data point than outstanding loan balances, which fluctuate with amounts drawn.

58 Plans that articulate the client’s overall approach to the transition to net-zero, including objectives, targets, actions, progress, and accountability mechanisms. Details of criteria met by a plan assessed in a particular maturity band can be found in: [Client Engagement Approach on Climate: Energy Sector](#).

59 RBC Capital Markets clients only as described in the Client Engagement Approach on Climate. Figures may not add to exactly 100% due to rounding.

**Figure 32: Initial results for power generation sector clients assessed using the transition readiness framework,<sup>60</sup> as at 31 October 2023**



Source: Royal Bank of Canada

The insights from the initial assessment are helping shape RBC Capital Markets’ engagement priorities for supporting clients’ transition journeys as follows:

**For the energy sector:**

- **Non-committed:** Establish transition plans.
- **Early:** Increase robustness of transition plans, including by setting emissions reduction targets, providing timelines for emissions reduction actions, and establishing a target for methane emissions reductions.
- **Emerging and higher:** Report Scope 3 emissions. This is important to enable clients and RBC to track total commitments, rather than relying on industry-level estimates. 65% of exposure in the Emerging Markets category is to clients that do not report Scope 3 emissions, which is one of the requirements to move into the Intermediate category.

**For the power generation sector:**

- **Non-committed:** Establish transition plans.
- **Early:** Setting 1.5 degrees C aligned emissions reduction targets. RBC Capital Markets intends to work with its clients to understand the challenges to meeting this criterion and how RBC might be able to provide support.
- **Intermediate:** Accelerating the timeline for achieving net-zero by 2035 and unabated coal phase-out to 2030. RBC Capital Markets intends to work with its clients to understand and support where there are opportunities to make progress on these key aspects.

RBC Capital Markets’ objective is to help its clients progress their standing under the transition readiness framework over time. RBC plans to disclose portfolio-level results of this assessment in annual climate reporting going forward.

<sup>60</sup> RBC Capital Markets clients only as described in the Client Engagement Approach on Climate. Figures may not add to exactly 100% due to rounding.

### Three key lessons

- **Start where you can:** Client engagement and decarbonization finance are nascent areas of work and a lack of well-established and regionally-appropriate industry standards can be challenging. For example, at the time RBC established the decarbonization finance category in its Sustainable Finance Framework, Canada did not have a national sustainable finance taxonomy that could set a national standard for providing decarbonization finance, including in the energy sector. Rather than wait for these challenges to be resolved, RBC approached the development of both the CEAC and the decarbonization finance category recognizing that its initial attempts would not be perfect and would need to evolve over time. In any event, these initial attempts have provided a starting point from which RBC can work with its clients and stakeholders to evolve and strengthen its approach going forward.
  - **Adapting to business realities is key:** Where available, industry guidance and methodologies provide incredibly valuable starting points and they can help increase comparability across the industry. But on topics as complex and nuanced as transition planning and decarbonization finance, it was important for RBC to adapt and tailor its approach to reflect the business realities of its clients and in its home markets. RBC believes the CEAC is more meaningful because of this adaptation and it is grateful to its civil society partners that continue to help it think through the balance between ambition and practicality.
  - **Transparency is important and valued:** Clients and stakeholders have appreciated the transparency provided by the CEAC. Sharing details of the assessment tool RBC Capital Markets is using and the context and thinking that shaped the approach has enabled deeper and more meaningful conversations — both about how clients can be supported and how the CEAC could evolve. RBC has also found that many clients and stakeholders appreciate the challenges involved in this nascent and complex area of work.
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## 16. STANDARD CHARTERED BANK PLC

**Sector:** Banking

**HQ Geography:** London, UK

**Firm Overview:** Standard Chartered Bank (Standard Chartered) is a leading international cross-border bank with a footprint across the world's most dynamic markets. It serves three client segments: Corporate & Investment Banking; Wealth & Retail Banking; and Ventures.

Standard Chartered chaired the Net Zero Banking Alliance (NZBA), the industry-led banking element of GFANZ from 2021-2024. Additionally, Bill Winters is currently a member of the GFANZ Principals Group.

The Group CEO and CSO are part of the World Economic Forum's Alliance of CEO Climate Leaders. This is a CEO-led community committed to raising bold climate ambition and accelerating the net zero transition by setting science-based targets, disclosing emissions and catalyzing decarbonization and partnerships across global value chains.

Standard Chartered has also co-chaired the United Nations' Alliance of Global Investors for Sustainable Development (GISD).

Standard Chartered has an important role to play in supporting its clients, sectors and markets to deliver net zero, but to do so in a manner that supports livelihoods and promotes sustainable economic growth. Standard Chartered currently provides financial services to clients, sectors and markets that contribute to greenhouse gas emissions; however, it is committed to net zero in its own operations by 2025 and in its financed emissions by 2050. This is set out in Standard Chartered's Net Zero Roadmap and progress towards this is disclosed in the Annual Report.

### STRATEGY

#### Standard Chartered's approach to Transition Finance

With a long-standing presence in parts of the world where sustainable finance can have a significant impact, Standard Chartered is strategically positioned to connect capital to where it's needed. The bank aims to help accelerate the transition and reach net zero emissions in its financed emissions by 2050 and in its own operations by 2025. Since 2018 it has been working on aligning its direct and indirect emissions to the Paris Agreement's goal of well below 2 degrees C of global warming by the end of the century.

Standard Chartered's Net Zero Roadmap sets out a clear and transparent path to deliver on its net zero commitments and sector-specific targets. Transition and green financing are the main levers Standard Chartered uses to help achieve its net zero targets.

Today, Standard Chartered's Green and Sustainable Product Framework governs all activities the bank views as "green" or "social". But, there is an urgent need to finance transition activities that sit outside those already covered by this framework but contribute to decarbonization. These financing activities are covered in Standard Chartered's Transition Finance Framework, which details how Transition Finance is governed at the bank.

Standard Chartered's approach to Transition Finance is based upon the IEA's Net Zero Emissions (NZE) by 2050 scenario and has been informed by currently available information, including the Climate Bonds Initiative White Paper and Discussion Paper, the regional taxonomies including the EU Sustainable Finance Taxonomy and the Singapore-Asia Taxonomy for Sustainable Finance, and the bank's own Net Zero targets.

The Transition Finance Framework's qualifying activities support real-economy emissions reductions in line with GFANZ's four key transition financing strategies:

- **Climate Solutions** (e.g., carbon capture, utilization, and storage (CCUS) on fossil fuel fired power plants)
- **Aligned** (e.g., hydrogen and battery electric trains)
- **Aligning** (e.g., expansion of scrap-based electric arc furnaces (EAFs) or electric cement kilns)
- **Managed Phaseout** (e.g., retirement of coal power plans)

While its transition finance activities each fall into one of the GFANZ four key transition financing strategies, it is structured by industry as aligned to the activities set out in the NZE.

Standard Chartered's Transition Finance Framework acts as a classification methodology for financing of eligible projects, and financial services provided to clients and/or transactions where at least 90% of the company's revenues are derived from qualifying transition activities, where these assets and entities meet the minimum gating criteria set out in the Framework.

## Transition Finance governance and approval process

The Transition Finance Labelling Sub-Committee manages the process for labeling deals as Transition per the bank's Transition Finance Framework. It is a delegate sub-committee of the Sustainable Finance Governance Committee (SFGC), the bank's foremost committee on managing greenwashing risk in sustainable finance product design and labeling. All deals must be presented to the Transition Finance Sub-Committee to be labeled as Transition Finance.

The Transition Finance Sub-Committee consists of the following representatives:

- Chief Sustainability Officer — Chair
- Global Head, Environmental and Social Risk Management
- Head of Sustainable Finance Solutions
- Executive Director, Reputational and Sustainability Risk
- Executive Director, Climate Risk Management

The Transition Finance Framework has been reviewed and approved by the Group's Responsibility and Reputational Risk Committee (GRRRC), which ultimately reports to the Board. It is operationalized through a Sub-Committee of the Group's Sustainable Finance Governance Committee (SFGC), which oversees greenwashing risk within Standard Chartered. This Transition Finance Sub-Committee approves each asset or entity labeled as Transition at Standard Chartered.

Eligible clients should have, or be in the process of developing, a credible science-based transition strategy, assessed internally using results from Standard Chartered's client-level Climate Risk Assessment. This is informed by industry guidance on assessing the credibility of transition plans.

**Figure 33: Standard Chartered transition framework used to determine a Transition asset or entity**



Source: Standard Chartered Bank

### Transition Finance Strategy progress

In 2021 Standard Chartered announced plans to mobilize US\$ 300 billion in Sustainable Finance by 2030. From January 2021 to September 2023, it mobilized US\$ 87.2 billion of Sustainable Finance against this commitment across its markets, making strong progress against this target.

Mobilization of Sustainable Finance is defined as any investment or financial service provided to clients that supports:

1. The preservation and/or improvement of biodiversity, nature, or the environment;
2. The long-term avoidance/decrease of GHG emissions, including the alignment of a client's business and operations with a 1.5 degrees C trajectory (known as Transition Finance);
3. Social purpose; or
4. Incentivizes clients to meet their own sustainability objectives (known as sustainability-linked finance).



While Sustainable Finance includes products that are outside of the Transition Finance Framework, Standard Chartered expects that Transition Finance-classified projects will be a material portion of this mobilization.

To qualify for labeling as Transition Finance, eligible clients should have, or be in the process of developing, a credible, science-based transition strategy, assessed internally using results from Standard Chartered’s Client-level Climate Risk Assessment. This is informed by industry guidance on assessing the credibility of Transition Plans.

Standard Chartered defines Transition Finance as any financial service provided to clients to support them to align to their business and/or operations with a 1.5 degrees C trajectory.

Assets and activities which qualify for labelling as Transition will:

1. Be compatible with a 1.5 degrees C decarbonization trajectory, established by science.
2. Not hamper the development and deployment of low-carbon alternatives or lead to a lock-in of carbon-intensive assets.
3. Meet the expectations defined in Standard Chartered’s Environmental and Social Risk Management Framework. This includes expectations around community impacts, labor standards and human rights as key components of a “Just Transition”.

All transactions supported by Standard Chartered must align with its Position Statements and minimum safeguards as defined in its ESRM Framework. This includes alignment with its Climate Change Position Statement which requires all clients in high-carbon sectors to have a strategy to transition their business in line with the goals of the Paris Agreement (criteria 1); and the same clients

to report on current greenhouse gas emissions, preferably in line with TCFD.

[Standard Chartered’s ESRM Framework](#) provides an overview of its approach to managing Environmental and Social Risk, which is a core part of Standard Chartered’s approach to sustainability. Unlike the Green and Sustainable Product Framework or the Transition Finance Framework which outline eligible themes and activities it considers as “green”, “social”, or “transition”, this Framework focuses on the management of E&S risk associated with its client relationships and transactions.

Standard Chartered also maintains cross-sector and sensitive sector Position Statements (Agribusiness, Extractive Industries, Chemicals and Manufacturing, Infrastructure and Transport, Power Generation and Thermal Coal). This extends beyond its prohibited activities. The Position Statements are reviewed regularly to reflect emerging E&S risks, industry best practice and the bank’s evolving risk appetite. For example, Standard Chartered’s position statement for chemicals and manufacturing (which includes iron and steel manufacturing) can be found on [the bank’s website](#).

Standard Chartered has invested in a number of toolkits and partnerships to quantitatively measure climate-related physical and transition risks and in 2023 it conducted scenario analysis across a range of plausible scenarios. It continues to engage with its clients to understand their climate adaptation, mitigation and transition plans.

**Figure 34: Standard Chartered Toolkits and Partnerships used to assess potential Transition investments/engagements**

Toolkits and Partnerships	Description
<b>In-house Climate Risk Questionnaires</b>	Client-level Climate Risk Questionnaire (CRQ) to assess and gather information on client mitigation and adaptation plans. The information gathered through these CRQs form part of the Client-level Climate Risk Assessments (CRAs).
<b>Munich Re</b>	Physical Risk assessment tool built on extensive re-insurance experience to obtain location-based hazard and risk scores under current day for acute weather events (e.g., storms, floods, or wildfire) and longer-term time horizons (2050, 2100) for Representative Concentration Pathway (RCP) scenarios 2.6, 4.5 and 8.5, and for chronic risks such as sea level rise.
<b>Baringa Partners</b>	Scenario expansion models and expertise used to design bespoke short-term scenario narratives and build scenarios for management stress tests and implement them within the Aladdin Climate transition risk models.
<b>BlackRock</b>	Aladdin Climate transition risk models are used to translate the impact of transition and Physical Risk scenario variables on company financials and probabilities of default, and obtain temperature alignment results to assess a temperature score to indicate client- and portfolio-level global warming potential up to 2030. <sup>1</sup>
<b>S&amp;P Global</b>	Asset locations, energy mixes and client-level emissions i.e., absolute emissions (tonnes of CO <sub>2</sub> e) and emissions intensities by revenue (tonnes of CO <sub>2</sub> e/\$ million) for Scope 1 and 2 and, where available, for Scope 3 emissions.
<b>Imperial College London</b>	Academic expertise leveraged to advance our understanding of climate science, upskill our employees and senior management, and progress independent research on climate risks with a focus on emerging markets.

Source: Standard Chartered Bank

**REAL-ECONOMY TRANSACTION**

**Aligning**

**Real-economy company/project name:**  
**Confidential**

**Sector:** Industrials

**HQ Geography and Key Markets:** India

**Form of Finance/Type of Transaction/Asset Class:**

Standard Chartered provided the client with a US\$ 12.5 million term loan to fund a US\$ 16 million investment in a 12 TPD (tonnes per day) Compressed Biogas (CBG) project.

**Amount of Capital Committed and/or**

**Deployed:** US\$ 12.5 million term loan

**Investment Horizon/Duration/Contract**

**Period:** 7 years

**Company Overview:** The client is a diversified industrial company in South Asia with operations in chemicals, plastics, cement, fertilizers, sugar, and other agricultural products. More than half the

client’s overall revenue comes from its agricultural segment, which includes products such as urea, sugar, farm solutions (such as herbicides and plant nutrition enhancers), and hybrid seeds.

The client is setting up a Compressed Biogas (CBG) plant using a by-product from the sugar manufacturing process as feedstock.

**The client**

The client was setting up a 12 TPD CBG project using sugarcane press mud, a by-product from the sugar manufacturing process, as feedstock. This transaction supports the GFANZ Aligning transition financing strategy, as it demonstrates meaningful progress towards the client’s stated targets and aligns with India’s national commitment to support bioenergy.

CBG is considered a green fuel when [produced](#) from agricultural waste/biomass sources. Biogas as vehicle fuel is typically assumed to have >50% GHG reduction compared to fossil fuels. Depending

on the digestible biomass of the used feedstock, typical overall efficiency of the biogas supply as fuel is between 70% and 85%.<sup>61</sup> In this case, press mud (a waste by-product) generated by the client's sugar manufacturing operations will be used as a feedstock to produce CBG that will be sold to oil marketing companies for application as an alternative fuel for running Internal Combustion Engine (ICE) vehicles.

### Alignment to Transition Finance strategy

This particular transaction was classified under the 'Bioenergy (advanced)' eligible theme from [Standard Chartered's Transition Finance Framework](#).

While the client has not yet committed to net-zero, they have acknowledged the need to do so and are supporting India's national net-zero strategy through their Bioethanol and CBG projects. Additionally, they have short-term targets and disclose Scopes 1, 2, and 3 emissions and other relevant information through their annual sustainability reports. The following initiatives have also been undertaken by the client:

- Achieved 12% reduction in emission intensity in 2022.
- Increased usage of green energy in the manufacturing process: The client's sugar business is now 100% biomass-powered (derived from Bagasse, which is the pulpy material leftover after crushing sugarcane stalks). The client has also increased the procurement of renewable energy by an additional 50 MW.
- Bonsucro certification has been received by three of the client's sugar facilities and 5,000 small-scale growers. This is the largest smallholder farmer certification in Bonsucro's history. Bonsucro offers a credible certification process to demonstrate commitment to environmental and social sustainability in sugarcane.

- The client has also undertaken several other initiatives including blending of ethanol with alcohol produced from molasses (bio-route), use of blue hydrogen as an energy source, cogeneration, use of solar energy, etc. These initiatives have resulted in a reduction of around 2.6 million tCO<sub>2</sub>e.

Modern bioenergy is an important source of renewable energy – its [contribution](#) to final energy demand across all sectors is currently five times higher than wind and solar PV combined, even when the traditional use of biomass is excluded. Achieving net zero emissions requires more than just offering renewable electricity; renewable gases and liquids are equally important. CBG, which can be integrated into the existing gas infrastructure, provides the easiest route to decarbonizing natural gas applications.

The government of India has recently [mandated](#) the blending of CBG into the natural gas network (starting FY 2024-2025), aiming to advance the country's commitments towards achieving net-zero. With this in mind, Standard Chartered expects the CBG produced by the client's project to be blended with compressed natural gas (CNG) for transportation purposes.

CBG project installation in India offers multiple advantages, such as improving waste management, promoting local clean energy production, and reducing reliance on imported CNG, which currently [meets](#) 47% of India's gas needs. CBG seamlessly integrates into existing natural gas infrastructure, removing the need for new setups. The sector is gaining momentum towards its goal of establishing 5,000 CBG projects nationwide under the Sustainable Alternative Towards Affordable Transportation (SATAT) scheme. Under this scheme, the government aims to produce 15 million metric tonnes (MMT) of CBG per annum. This CBG project is part of this scheme.

<sup>61</sup> Efficiency is defined here as the available energy within the final fuel ready for use in a natural gas vehicles (NGV) in comparison to the theoretical available energy in terms of degradable biomass in the feedstock being used for biogas production.

## Key considerations

India [produces](#) close to 500 million metric tons of agricultural waste per year; when burned, the waste is a major cause of CO<sub>2</sub> emissions. With the highest livestock population in the world, India also produces huge amounts of animal waste. Agricultural and livestock waste are major potential feedstocks for producing biogas, as are press mud, spent wash, waste from abattoirs, pulp and paper waste, and organic municipal solid waste generated in urban centers.

When contemplating whether to provide the loan, Standard Chartered's Sustainable Finance team focused on increasing awareness internally on the critical role that biogas can play in India's energy transition, especially as most of the focus on renewable energy has zeroed in on solar and wind power. There were questions raised around the criticality of biogas and the clarity on funding provided going towards the end-to-end process (from manufacture to compression).

The difference between Green and Transition labeling for this particular transaction was extensively discussed at the Transition Finance Labelling Sub-Committee at Standard Chartered. While the sugarcane feedstock is a waste product, it is not agricultural residue, so it would require certification by a credible source (in this case, Bonsucro) to be classified as Green under Standard Chartered's Green and Sustainable Product Framework. Bonsucro certification is available only for part of the cane sourced for this unit so this could not be considered Green per Standard Chartered's eligibility criteria.

## Looking ahead

Standard Chartered will monitor the transaction to ensure that the use-of-proceeds remain as stated at the time of transaction approval. It will also continue to review the client's progress on their transition strategy as well as their future net-zero target-setting plans.

## Other points of discussion — Climate risk assessment and monitoring

To assess climate-related risks and opportunities in the short, medium, and long-term Standard Chartered uses scenario analysis to consider how risks and opportunities may evolve under different situations. It has used its existing stress testing models to model the credit risk impact with overlays provided for: physical and transition risk using data on client transition mitigation readiness; climate adjusted asset level adjustments; assumptions on stranded assets for consumer mortgages; and other available data as highlighted below.

**Figure 35: Transition and physical risk scenario analysis adapted to align to the Standard Chartered investment portfolio**

**Transition (T) and Physical (P) Risk scenarios**  
 We adapted the following scenarios for our CCIB portfolio:

Scenario Family	Scenario Name	Key Features
<b>NGFS v3</b>	Net Zero 2050 (T)	Global warming limited to 1.5°C through stringent climate policies and innovation Global net zero CO <sub>2</sub> emissions around 2050
	Delayed Transition (T)	Strong policies will be needed to limit warming to below 2°C Annual emissions do not decrease until 2030
	Current Policies (P+T)	No additional policies beyond those currently implemented, along with slow technology change Global temperature rises over 3 degrees by 2100
<b>Bespoke</b>	In-house Base Case (P+T)	Credibility assessment of countries' current sector targets in the short-term (2030) and a durability assessment of reduction commitments in the long-term (2050) Delayed transition to a low-carbon economy and a lack of early climate action resulting in a 2.5°C temperature rise by 2100
	'Green Trade War' Tail (T)	Impact to global trade due to introduction of Carbon Border Adjustment Mechanism leading to trade war escalation Explores risks which are not addressed by NGFS scenarios and may emerge over a short-term horizon
	'Migration' Tail (P)	Increasing severe acute weather events globally impact global food prices and drive migration and displacement

The scenarios used for CCIB clients are characterised by different levels of physical and transition risk, driven by various features in each scenario.

**Carbon price:** increase in carbon price puts additional cost pressure on clients, squeezes the profit margin, and thus helps to determine level of potential credit losses.

**Oil price:** increase (or lack thereof) in oil price impacts on clients' revenues and profitability and thus helps to determine level of potential credit losses.

**Features of the NGFS and bespoke scenarios used in a Standard Chartered scenario analysis**

Feature	Year	NGFS v3			Bespoke Scenarios	
		Net Zero 2050	Delayed Transition	Current policies	Tail Risk (Physical)	Tail Risk (Transition)
<b>Temperature rise</b>	2050	1.4°C	1.6°C	3°C+	NA	NA
<b>Carbon price</b> (\$2015/tCO <sub>2</sub> )	2030	124	6	6	61	66
	2050	487	416	7	70	90
<b>Oil price</b> (\$2015/boe)	2030	84	94	94	50	50
	2050	107	118	125	41	41
<b>Gas price change</b> (vs 2020, %)	2030	56%	43%	43%	15%	15%
	2050	52%	54%	80%	-14%	-14%
<b>Power demand change</b> (vs 2020, %)	2030	27%	35%	35%	20%	20%
	2050	120%	129%	106%	75%	75%
<b>GDP baseline change</b> (vs 2020, %)	2030	34%	36%	36%	-4%	-5%
	2050	111%	110%	118%	-2%	-5%

Source: Standard Chartered Bank

Many of the assumptions and methodologies that underpin the scenario analyses continue to rely on nascent methodologies as well as a dependence on first-generation models and data challenges. Many of these limitations are shared across the industry. Given the complexities of climate modeling, it should also be noted that the results do not include the real-world aspects, such as the non-linear shifts and complex feedback loops. However, they are intended to provide a strategic direction of the sense of portfolio concentrations subject to potential climate losses.

To incorporate the most accurate and up-to-date analysis possible, on an annual basis, Standard Chartered will:

- Commission external verification of its progress against the bank's Sustainable Finance income target, which includes any income generated through any assets or entities recognized as Transition. This will include external verification of alignment of the assets or entities with the Transition Finance Framework.
- Update the Transition Finance Framework in line with the latest available science and to reflect changes in the pace of technological developments across different sectors and geographies. Where industry principles, guidelines and taxonomies are developed, similar to those for Green, Social and Sustainable finance, Standard Chartered will reflect these in the Transition Finance Framework.

In addition to the annual updates to the Transition Finance Framework, Standard Chartered recognizes that there may be transactions which sit outside the list of qualifying activities set out below. In particular, the NZE is focused on the energy transition and therefore, some sectors and technologies are not reflected in the analysis. As such, the Transition Finance Sub-Committee has ad-hoc decision-making rights over the list of qualifying activities, and the ability to label assets or entities as 'Transition' where it is possible to demonstrate alignment with the principles set out above.

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## 17. UNICREDIT

**Sector:** Bank

**HQ Geography:** Europe — Countries included in “the Group” are: Italy, Germany, Austria, Romania, Bulgaria, Bosnia, Croatia, Czechia, Hungary, Slovakia, Slovenia, Russia, and Serbia (the country)

**Firm Overview:** UniCredit (UC) is a pan-European commercial bank offering its products and services in Italy, Germany, Central and Eastern Europe.

UC joined the Net Zero Banking Alliance (NZBA), targeting net zero on its own emissions by 2030 and on financed emissions by 2050.

In 2023 UC announced 2030 targets for three of the most carbon intensive sectors within its own loan portfolio: oil and gas, power generation, and automotive. In January 2024 it complemented its first set of goals with a target for the steel sector, another carbon-intensive sector in its portfolio.

UC’s inaugural Transition Plan was included in its 2023 Integrated Report, published in March 2024.

Follow the link to see its last 2023 integrated report for further details. [Sustainability Reporting- UniCredit \(unicreditgroup.eu\)](https://www.unicreditgroup.eu/sustainability-reporting)

### STRATEGY

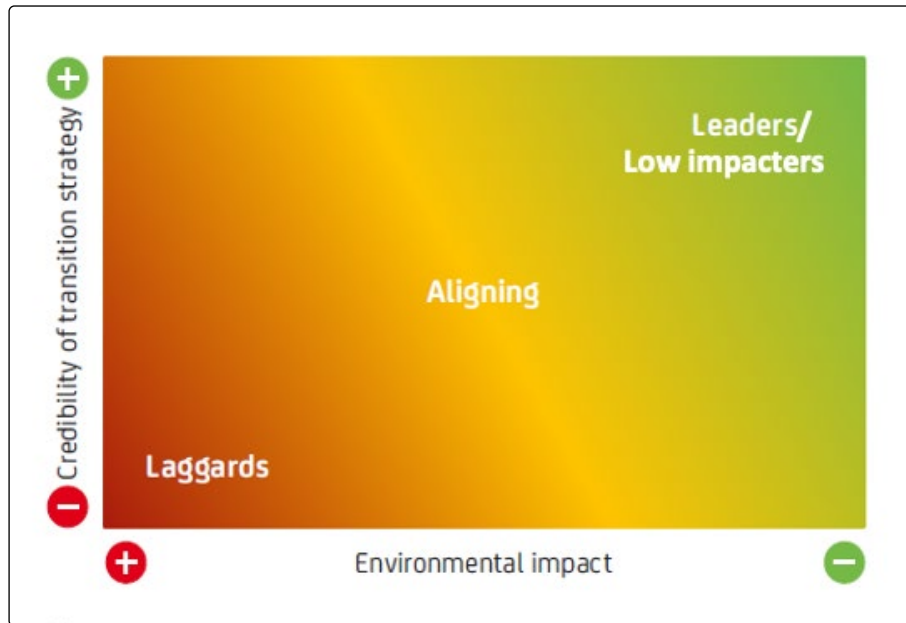
#### UniCredit’s approach to Transition Finance

UC has defined specific net zero client engagement strategies, inspired by the GFANZ framework, to tailor its approach to the position and needs of different clients. First, it clustered its net zero clients based on the clients’ actual impact on UC’s financed emissions and on the clients’ forward-looking transition strategy, thereby identifying transition leaders; clients aligning to transition; and transition laggards. The next stage was to set differentiated engagement strategies by client cluster and sector, ranging from: retaining/expanding UC’s relationship with leaders; to active engagement of aligning clients; and gradual reduction of its support to laggards. In all cases, UC considers green and Transition

Finance as a key lever to assist its clients’ transition, especially for those that are not yet leaders on the transition journey.

In line with UniCredit’s ESG Strategy, in the last few years it developed dedicated products such as green loans (aligned to market standards such as ICMA or the EU Taxonomy); green financing in partnership with public entities at the local and European level (e.g., Kreditanstalt für Wiederaufbau, the European Investment Fund); sustainability-linked loans, etc. Once it started on its net-zero journey, UC realized that supporting its clients with dedicated Transition Finance is key to it reaching its net-zero ambition. Within its transition planning, UC has dedicated specific finance, confirming transition finance’s relevance in its own transition strategy.

**Figure 36: UniCredit NZ clusterization matrix**



Source: UniCredit

UC has established its own internal definition of Transition Finance based on EU Commission recommendations and, at the end of 2023, it included it in its ESG Product Guidelines. These ESG guidelines, applied to all Group countries, aim to define a comprehensive methodology for the homogeneous classification and reporting of UniCredit's ESG products and services offerings, and to define the criteria for eligibility. Specifically, the ESG guidelines require UC's clients to have externally certified transition plans in place to access Transition Finance, so that UC can ensure that the required financing is dedicated to eligible transition initiatives. The final objective is to protect UC against greenwashing.

Finally, to provide all involved UniCredit functions with relevant net zero information and methodologies needed to effectively implement its transition strategy, it is upgrading its supporting tools and introducing new functionalities, such as:

- Introducing clients' transition plans assessment functionalities into existing tools; and

- Enabling business colleagues to simulate net-zero impact at the single deal and portfolio level through dedicated tools.

Regarding the first bullet, to shape its client's "transition plan assessment methodology", UC has identified key principles and components of a client's transition plan that it reviews extensively. UC's review is based on the main existing frameworks and methodologies. UC was inspired by GFANZ's "Financial Institution Net-zero Transition Plans Fundamentals, Recommendations, and Guidance", as well as indications provided by the CDP, Transition Plan Taskforce, and EU Recommendations on facilitating finance for the transition to a sustainable economy.

As noted above, Transition Finance is intended to be a key lever to assist UC clients' transition, especially for those that are not yet leaders on the transition journey.

In the steel sector, UniCredit is committed to support clients to move from high emitting production facilities using blast furnaces to low emitting facilities,



such as direct reduction with hydrogen and electric arc furnaces supplied with renewable energy.

In addition, UC has been financing new greenfield facilities that are already embedding the latest low emissions technologies and the use of renewable energy sources, as proven by its significant transaction support to H2 Green Steel (see below).

In general, to effectively identify what products are most effective for its clients, UC is proud to leverage its dedicated ESG functions, such as the ESG advisory team, and industry teams with sectorial competencies, which help business network colleagues analyze clients' ESG needs in each sector and identify the most appropriate products to support them.

## REAL-ECONOMY TRANSACTION

Climate  
Solutions

### H2 Green Steel

**Sector:** Steel

**HQ Geography and Key Markets:** Europe

**Form of Finance/Type of Transaction/Asset**

**Class:** Project Financing

**Amount of Capital Committed and/or**

**Deployed:** EUR 4.2 billion project financing comprised of EUR 3.55 billion in senior debt and EUR 600 million in junior debt.

H2 Green Steel is a start-up founded in 2020 with the goal of decarbonizing steel, one of the hard-to-abate industries. It will produce steel with up to 95% lower CO<sub>2</sub> emissions than steel made using coke-fired blast furnaces.

UniCredit was a lead bank in the EUR 4.2 billion project financing, which comprised EUR 3.55 billion in senior debt and EUR 600 million in junior debt. UC helped H2 Green Steel secure funding of close to EUR 6.5 billion (i.e., EUR 4.2 billion in debt financing, EUR 2.1 billion in equity, and a EUR 250 million grant from the EU Innovation Fund).

Once operational (expected 2026), H2 Green Steel's Boden plant (Sweden) will be the world's first large-scale green steel plant, abating up to 95% of CO<sub>2</sub> emissions compared to traditional steelmaking. The manufacturing process will be fueled by hydrogen (produced using an electrolysis process), thereby using 100% renewable energy sources. The project is located in the north of Sweden, benefitting from the low-cost renewable energy. H2 Green Steel will also implement a continuous casting and rolling process to improve the energy efficiency.

UC classifies this Transition Finance strategy as a Climate Solution because it is financing a new technology that is aimed at abating up to 95% of CO<sub>2</sub> emissions compared to traditional steelmaking.

Because H2 Green Steel is in the process of building the world's first large-scale green steel plant that will use 100% renewable energy and green hydrogen to produce green Direct Reduction Iron (DRI) and green steel, it is considered a greenfield project and, as such, does not need a transition plan. UniCredit was involved very early and supported H2 Green Steel in developing bankable project financing, reviewing, in detail, every aspect of the project to ensure compliance with the EU taxonomy, Equator Principles, LMA Green Loan Principles, and other international and local standards.

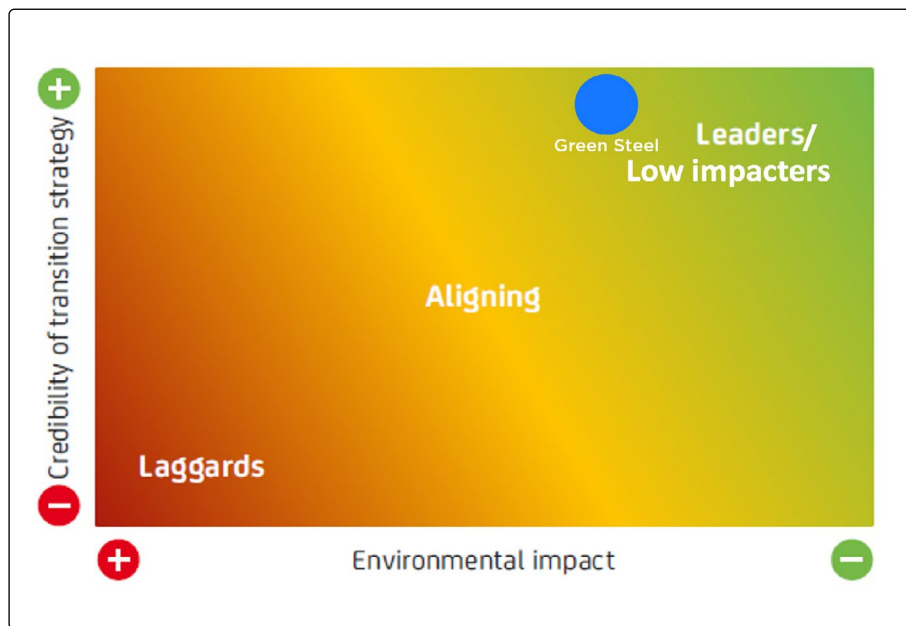
This transaction is perfectly aligned with UniCredit's commitment to support its clients to achieve EU decarbonization targets. UC has targeted a 2030 emissions intensity of 1.11 tCO<sub>2</sub>/t in line with the benchmark and market practices for the steel sector, corresponding to an alignment score equal to zero in 2030.

UC's steel target has been defined in line with the methodology of the Sustainable STEEL Principles Association, a climate-aligned agreement for the steel sector to which, alongside five other top global lenders, UniCredit became a signatory in September 2022. The Sustainable STEEL Principles

is a climate-aligned finance agreement for the steel sector. Designed by a working group composed of UniCredit, Citi, ING, Société Générale, and Standard Chartered, the Sustainable STEEL Principles have

been drawn up to tackle this problem head on and significantly reduce carbon emissions from steel production.

**Figure 37: H2 Green Steel classification**



Source: UniCredit

On the basis of the methodology adopted by UC for clients' clusterization, H2 Green Steel is classified as Leader/Low Impacter for its low environmental impact and the highly credible transition strategy, contributing positively to UC's net-zero target and path.

**Climate Solutions strategy**

H2 Green Steel and its stakeholders and lenders have the ambition to realize the first large-scale green steel production based on 100% renewable energy. H2 Green Steel will be producing green

hydrogen, green DRI, and green steel, reducing CO<sub>2</sub> emissions by 95% compared to traditional steelmaking. H2 Green Steel is expecting to avoid 0.3 billion tonnes of CO<sub>2</sub> by 2040.

H2 Green Steel's plant, which is currently under construction, will showcase green steel production that is net-zero and will offer a feasible solution for the steel industry, which is responsible for 7% of global industrial carbon emissions. H2 Green Steel is an example of a GFANZ Climate Solution strategy aimed at reducing real-economy emissions.

## Lessons learned

The financing process for the large-scale H2 Green Steel project in Boden, Sweden was quite complex, featuring both equity and debt funding. The financing process was successful thanks to an outstanding project management team and close cooperation of all key financing parties and advisors. Throughout the process, all stakeholders were committed to the success of the financing of this first-of-its-kind project. Ensuring that critical infrastructure such as rail, utilities, and material handling were in place at the start of operation of the plant was an additional challenge.

Not only did the H2 Green Steel Project have to be financed, but the critical infrastructure such as rail, utilities, and material handling also has to be put in place for the start of operation. For some infrastructure investments, public

tendering processes need to be arranged by the municipalities, which can take time.

In 2022 UniCredit signed the Sustainable STEEL Principles, a climate-aligned finance agreement for the steel sector jointly with five other top global lenders. Designed by a working group comprised of UniCredit, Citi, ING, Société Générale, and Standard Chartered, the Sustainable STEEL Principles have been drawn up to tackle this problem head on and significantly reduce carbon emissions from steel production. This agreement among lenders, provides a framework for assessing and disclosing the degree to which the emissions associated with their steel loan portfolios are in line with 1.5 degrees C climate targets — providing the necessary tools for client engagement and advocacy.

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## 18. VOLO EARTH VENTURES

**Sector:** Venture Capital

**HQ Geography:** United States (Snowmass Village, CO)

**Firm Overview:** VoLo Earth, founded in 2020, is an early-stage climate tech venture capital (VC) firm focused on the global energy transition. It is led by a team of specialists in climate tech with a focus on energy/electricity, mobility, buildings, and industry. Currently investing out of its second fund, the team utilizes a set of proprietary data-driven tools to make investments focused on indisputable technology differentiation and step-change value propositions. Among its 30+ portfolio companies are BlocPower, Nth Cycle, Banyan Infrastructure, and Blue Frontier.

VoLo Earth is a member of Impact Capital Managers and Venture Climate Alliance.

### STRATEGY

#### VoLo Earth's approach

VoLo Earth was formed to address the planet's climate crisis. It is focused on scaling renewable energy across the largest sectors of the global economy, aiming for gigaton (GT) scale reductions in GHG.

All of its investments are in Climate Solutions as defined by GFANZ, including investments in technologies, services, and tools that mitigate, eliminate, or remove GHG emissions. Its investments are intended to expand economy-wide emissions reductions through the deployment of Climate Solutions. VoLo Earth quantifies and defends the carbon impact (CO<sub>2</sub>e) of every product, technology, and company in which it invests. VoLo Earth requires that each of its investments have mitigation definitions that align with GIIN IRIS+ metrics and are continuously improved to capture the full life-cycle activities. VoLo Earth investee companies, therefore, contribute double materiality: impact materiality and financial materiality. Details regarding its accounting methodology and proprietary "Total Carbon to Paid-in Capital" metric are outlined below.

The categories of investments include energy on the supply side and buildings, industry, and mobility on the demand side. VoLo Earth has 17 sub-markets of focus within these two categories and targets the highest impact areas of the value chain. It determines the areas of highest impact by evaluating investments across the dimensions as follows: "largest Total Addressable Market (TAM) x largest emissions attribution x historically difficulty to abate".

VoLo Earth particularly emphasizes technologies and [business models](#) that enable decarbonization in the largest, but historically difficult to access, sub-sectors of these verticals (energy, buildings, industry, and mobility).

VoLo Earth is of the view that the energy transition does not entail a linear, one-for-one replacement of energy sources. Instead, it believes the energy transition is an opportunity for structural improvements to eliminate waste, misalignment, and excessive costs with products and services as technologies usher a reshaping of the surrounding economic incentives and flows of capital.

## Real-economy examples — Skyven and BlocPower

Skyven and BlocPower are two of VoLo Earth's portfolio companies recently recognized by the US Department of Energy (DOE) for climate finance innovation. Of the seven entities the DOE recognized, only Skyven and BlocPower were early-stage companies. VoLo Earth led each of these companies' previous financing rounds (Skyven's Series Seed and BlocPower's Series B) with preferred equity. This preferred equity entailed Board of Director positions and majority investor rights.

Both Skyven and BlocPower are adapting traditional energy finance to serve decarbonization in large, but historically difficult to access, decarbonization markets. BlocPower is working to decarbonize heating, cooling, and energy efficiency in urban and peri-urban buildings, while Skyven is working to decarbonize medium-temperature industrial process heat. For BlocPower, this means addressing the demographics most commonly left behind in the "progress" of techno-economic advancement (with a business model focused on low- and moderate-income (LMI) housing and workforce development).

For both Skyven and BlocPower, the level of difficulty in decarbonizing the hard-to-abate sectors emphasized the gaps in traditional models. Climate finance innovation can be a response to the challenges of decarbonizing deeply entrenched, globally scaled practices that define buildings and industry. VoLo Earth believes the coupling of business and finance innovation with differentiated tech will likely be the accelerant needed to make the energy transition mainstream and will provide the investment community with the necessary returns to create a diversified portfolio.

### REAL-ECONOMY TRANSACTION

Climate Solutions 

#### Skyven

**Sector:** Industrial Decarbonization

**HQ Geography and Key Markets:**

California, USA

**Nature of relationship/influence/degree of association with the real-economy client**

**or portfolio company:** Preferred equity shareholders with Board of Director position and major investor rights.

**Company Overview:** Skyven uses advanced industrial heat pump technology to deliver industrial clients with financial savings through a thermal energy services agreement (TESA).

Industrial process heat produces 7.5 GT of GHG emissions per year, which is equal to the GHG emissions of the transportation industry. Twenty-nine percent (29%) of global energy consumption derives from industrial process heat and most of the industrial heat used worldwide today is produced from coal (45%) and natural gas (23%). The industrial heat operations process is one of the hardest processes to decarbonize en masse.

Skyven provides an industrial heat-as-a-service contract to industrial customers that displaces fossil fuel-based thermal energy production at facilities with a renewable or low carbon solution — in this case, "Arcturus", Skyven's name for its steam generating heat pump. This contract, called a Thermal Energy Services Agreement (TESA), represents a three-way agreement between Skyven, the industrial customer, and a third-party financier to fund the capex of the Arcturus system. In other words, the TESA is like a power purchase agreement (PPA) for British Thermal Units (BTUs).

Skyven uses technology to de-risk capital projects that reduce GHG emissions in manufacturing. Skyven does not require manufacturers to provide

capex — Skyven covers all capital costs, including maintenance, through project financing. Skyven measures energy savings using sensors and proprietary software. Skyven bills for saved BTU at a lower rating than the plant would otherwise pay for fuel, allowing for savings on day one after installation.

Skyven has taken an extremely challenging-to-decarbonize sector (industrial process heat) and has now enabled mass scale and adoption via a proprietary finance model for process heat (the TESA). Plant managers have historically been unable to decarbonize because of the barriers in place from a technology and finance perspective, which are now broken down with Arcturus and the TESA.

### REAL-ECONOMY TRANSACTION

Climate Solutions 

#### BlocPower

**Sector:** Building Electrification

**HQ Geography and Key Markets:**

New York, USA

**Nature of relationship/influence/degree of association with the real-economy client or portfolio company:**

Preferred equity shareholders with Board of Director position and major investor rights.

**Company Overview:** BlocPower is a climate technology company that utilizes its proprietary software for analysis, leasing, project management, and monitoring of urban clean energy projects, providing a comprehensive platform for building decarbonization.

Commercial and multi-tenant residential buildings in high-density urban areas have traditionally been one of the hardest sectors to electrify and decarbonize. This is amplified in low- to moderate-income communities.

BlocPower focuses on deploying solutions at the city and state level, enabling commercial and multi-tenant residential building owners to upgrade to the latest in energy-efficient, electric technology and appliances with little or no upfront cost by stretching payments over the lifetime of the installed systems.

At its core, BlocPower’s innovation lies in developing complex financial vehicles and an intricate corporate structure involving numerous sub-entities for various financing mechanisms; a non-profit arm for workforce training; and multi-layered contracts with municipalities. This model establishes new operating markets based on local factors such as environmental conditions, energy prices, incentives, and cost of capital to ensure favorable project economics for all stakeholders.

By leveraging innovative financing tools like green bonds, in-house workforce training, on-bill financing, and strategic partnerships, BlocPower has unlocked a new asset class for climate-focused investments while delivering affordable clean energy solutions and transferable job opportunities to underserved communities. Its model demonstrates how climate finance innovation can drive equitable sustainable development and pave the way for replication globally.

## REAL-ECONOMY TRANSACTION

Climate Solutions **Blue Frontier****Sector:** Building Electrification**HQ Geography and Key Markets:**

Florida, USA

**Nature of relationship/influence/degree of association with the real-economy client or portfolio company:**

Preferred equity shareholders with Board of Director position and major investor rights.

**Company Overview:** Blue Frontier is reducing the carbon footprint of buildings by slashing the energy consumption associated with comfort cooling. It reinvented air conditioning so that it is more than twice as efficient as the products that are available today.

Blue Frontier is another VoLo Earth portfolio company with a parallel role in the commercial and multi-tenant residential building ecosystem. Blue Frontier is building the world's next generation cooling technology. Coming out of the National Renewable Energy Laboratory (NREL), the company is commercializing a liquid desiccant-based HVAC and cooling technology with an initial product focus on dedicated outdoor air systems (DOAS).

Blue Frontier has an integrated desiccant regeneration core, which acts as a proprietary battery, allowing it to load shift nearly all of its electrical demand by 4-6 hours or more.

This results in a trio of step-change values for the HVAC sector:

1. Hyper-efficient cooling;
2. Grid demand-response capability during peak cooling load; and
3. Significant reduction in commercial facility demand charges.

Together, these define a game changing cooling technology that will enable an innovative finance model: Cooling-as-a-Service.

Skyven Technologies, BlocPower, and Blue Frontier rely on third-party financing for project capital. To make these innovations deliver superior economics in practice, they require reduced financial complexity, automation of the delivery, and regulatory process that ultimately lower the WACC (weighted-average cost of capital). Banyan Infrastructure, another company in the VoLo Earth portfolio makes this latter piece a reality.

## REAL-ECONOMY TRANSACTION

Climate  
Solutions **Banyan Infrastructure****Sector:** Renewable Finance**HQ Geography and Key Markets:**

California, USA

**Nature of relationship/influence/degree of association with the real-economy client or portfolio company:**

Preferred equity shareholders with Board of Director position and major investor rights.

**Company Overview:** Banyan Infrastructure's Software-as-a-Service (SaaS) platform for reporting, data storage, approval workflows, and risk management is for banks that originate, service, and securitize renewable energy loans.

Banyan's purpose-built project finance software addresses the friction in the project financing process, particularly for smaller scale projects.

Large banks often avoid these projects due to the high cost and time-consuming process of evaluating, managing, and maintaining them.

Banyan works with large banks like SMBC to streamline and automate the investment process. By cutting investment time and reducing transaction fees, Banyan makes it possible for banks to fund smaller, but profitable projects they would have otherwise overlooked. This not only expands the banks' market share but also accelerates the flow of capital to sustainable infrastructure projects.

Notably, Banyan played an instrumental role in the Greenhouse Gas Reduction Fund (GGRF), working alongside green banks and community development financial institutions. Its software helped cut down the time taken to write small loans, ensuring the funds reached the intended communities faster. This was crucial in developing the model for GGRF's capital roll-out.



**BOX 13. METRICS AND DECARBONIZATION CONTRIBUTION METHODOLOGY**

As a venture capital fund, VoLo Earth's metrics centralize around Scope 4 emissions, or Expected Emission Reductions.

As an asset class, early-stage VC underwriting prioritizes potential over trend lines; the same must be true for decarbonization potential. VoLo Earth analyzes and underwrites deals based on the belief there is an inextricable relationship between revenue and carbon abatement. This lends itself nicely to financial institutions situated at higher seniority in the capital structure because the achievement of Scope 4 reduction projections aligns with traditional financial underwriting due to a direct link to unit/revenue growth.

The steps outlined below describe how carbon impact (CO<sub>2</sub>e) analysis is central to each stage of VoLo Earth's investment process, from screening, through diligence, and into portfolio management.

**1. Screening**

Scalable and quantifiable carbon impact is a prerequisite for any company that moves from "rapid fire" (deck review) into "screening" (investment team phone calls).

At screening, VoLo Earth ensures a company's emissions are quantifiable, that they produce strong climate benefits, and scale on economic merit.

The "screening" questions are facilitated by VoLo Earth's Relative Value Matrix tool and are repeated consistently for each prospective investment.

**2. Diligence**

In its diligence stage, VoLo Earth measures and forecasts carbon impact alongside financial outcomes.

Exploration and substantiation of this carbon impact is systematically intertwined with

financial and commercial diligence through its Relative Value Matrix tool, which includes carbon accounting as part of financial diligence.

When investments move into the middle of the pipeline funnel, VoLo Earth conducts its formal carbon accounting process.

VoLo Earth follows the Prime Coalition GHG emissions framework. This methodology starts with careful diligence of company financial projections. VoLo Earth then fits company revenue and unit projections with business growth S-curves to further validate company forecasts and extend them to a 10-year timeline. Finally, VoLo Earth translates revenue and operations forecasts into impact forecasts using the amount of carbon mitigated per unit of product per service delivered. Each company's mitigation definitions align with GII IRIS+ metrics and are continuously being improved to capture an accurate and complete life-cycle impact.

Once VoLo Earth has forecasts, it systematically fits likelihood of success curves to each company based on the company's technical and commercial risk. VoLo Earth then runs portfolio-level monte carlo simulations to determine P50 values for the portfolio and its pro-rata share in accordance with the official GHG Protocol. Finally, VoLo Earth calculates the tonnes per limited partner (LP) dollar invested to determine the total carbon per paid-in dollar to the fund (TCPI). For sector-level reporting, the lack of sample size precludes the more robust simulation; as a result, VoLo Earth simply sums the risk adjusted company forecast to arrive at a risk adjusted sectoral forecast. This approach is intended to comply with [Project Frame's Pre-Investment Considerations](#).

For further information, please see VoLo Earth's [presentation](#) at a carbon accounting workshop for Impact Capital Manager GPs.

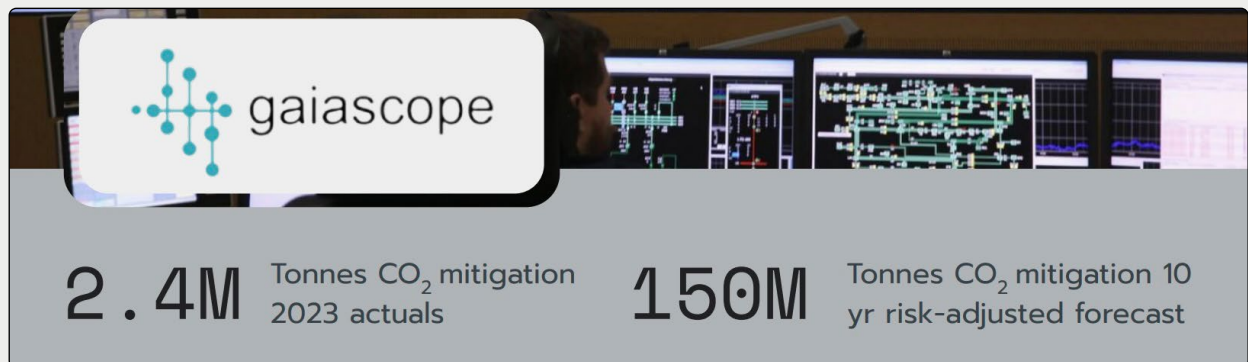
### 3. Portfolio Management

Post investment, VoLo Earth monitors companies' actual impact by measuring (and/or estimating) Scope 1-3 and Scope 4 emissions. Further, it maintains a forward-looking view of companies with respect to:

- 10-year emissions abatement forecasts
- Risk adjusted forecasts
- VoLo Earth pro-rata share of risk adjusted forecasts
- TCPI forecasts (total carbon per paid in dollar). A summary of company metrics is shared in VoLo Earth's annual impact report.

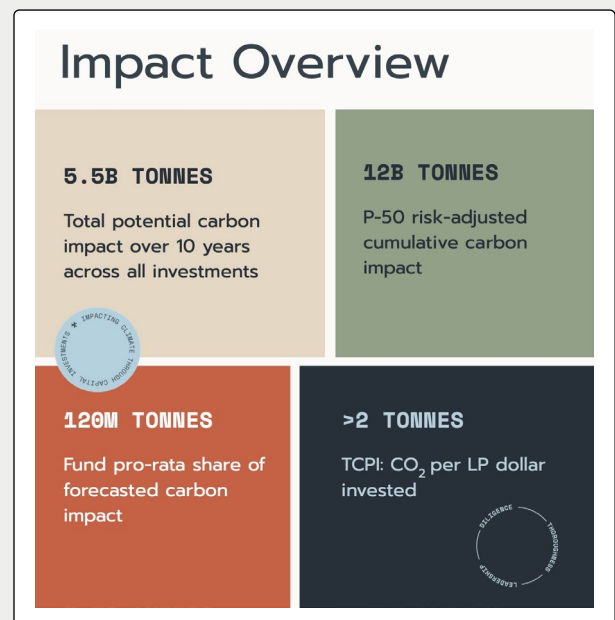
Figure 38 below shows the metrics related to Gaiascope, one of VoLo's investments.

**Figure 38: Gaiascope mitigation metrics**



Also, post investment, VoLo Earth manages and reports fund-level actual and forecast carbon impact using statistical risk management tools that allow it to forecast carbon impact that it uses to hold itself accountable. The intrinsic relationship between revenue growth (value creation) and carbon abatement ensures aligned incentives; if a portfolio company falls short of pro forma projection, it is falling short of associated emissions targets. In these ways, investing in Climate Solutions, with a fundamental linkage between revenue growth and CO<sub>2</sub>e abatement, embeds climate accountability with financial gain and fund durability. Key forecast values are illustrated in Figure 39 and provided in VoLo Earth's 2021 annual impact report.

**Figure 39: Key emissions forecast values**



### Lessons learned

As a VC fund, VoLo Earth’s Scope 3 (and Scope 4) impact dwarfs its Scope 1 and 2. Figure 40 below captures the magnitude of difference.

VoLo Earth is aligned with the growing understanding that it is most appropriate and effective for VCs to focus on forward-looking emissions metrics. VoLo Earth’s 2021 impact report underscores this point, through its Scope 3 emissions.<sup>62</sup>

**Figure 40: VoLo Earth 2021 portfolio emissions mitigation for Scopes 1, 2, 3, and 4**

<b>2021 Portfolio Emissions Mitigation</b>	<b>Tonnes</b>
Scope 1	-1
Scope 2	-40
Scope 3	2,210,000
<b>2021 Total CO2 Mitigation</b>	<b>2.2 M tonnes</b>

This does not pass the current EU definitions on materiality so VoLo Earth proposes that future discussions should be had around early-stage GHG emissions strategies – it is likely most impactful when companies in distinct stages of maturity (and the capital providers fueling them) focus on distinct frameworks for impact.

Several similarities across the four companies highlighted in the VoLo case study reveal additional learnings:

- Business model innovation will be required to unlock some of the largest and hardest to abate markets of the real economy (particularly within industrial and building decarbonization).
- Where unit economics and financials come first, follow-on financing is more likely to follow. Each of the four highlighted companies have received significant equity financing and non-dilutive financing, despite the market conditions of the past ~2 years.
- Partnering with scaled incumbents and/or government entities is highly advantageous to scale effectively and win market share. While many know this, what some miss is that doing so effectively requires building the company (and business model) around these partners from the ground up.

<sup>62</sup> Note, in the 2021 report, what is now deemed Scope 4 or EER was bucketed into Scope 3.

## Other points of discussion

In the world of climate tech VC, VoLo Earth believes there is no impact unless it delivers top 10% returns. Perhaps more importantly, VoLo Earth believes the corollary to this is that underperformance directly leads to damage to the planet. VoLo Earth's view is that the most likely cause of underperformance will occur due to 1) general partner (GP) greed for more AUM, 2) ego to lead deals, and 3) consensus over context.

VoLo Earth emphasizes systematic management of these risks and focuses on factors that are particularly critical for the VC market:

1. Primarily, VoLo Earth's investment approach combines **fundamental market research**. At the core of VoLo Earth's strategy lies a proprietary database of Energy Transition submarket research, encompassing detailed technical parameters and market saturation analytics. This comprehensive resource allows the fund to focus on specific supply chain bottlenecks and facilitates a systematic view of the Energy Transition landscape.
2. This research is complemented by a **standardized scoring system**. The fund employs an unbiased company scoring system based on 9,000 screened companies. This "pathway-agnostic" approach provides an augmentative diligence perspective, ensuring a fair and thorough evaluation of potential investments.
3. Finally, biases are further managed by quantitative, risk-based **portfolio construction**. VoLo Earth's portfolio construction is rooted in quantitative risk assessment. The fund runs quantitative probability distribution functions for each investment. This includes both new investments as well as follow-ons.

These tools collectively aim to mitigate cognitive biases that can impair investment performance. Implementing a systematic bias-reduction strategy is especially crucial in VC, given its reliance on qualitative assessments and key assumptions, as well as its protracted feedback loops — contrasting sharply with the immediate performance indicators available in day trading (for example).

## BOX 14. OLIVER WYMAN THE ROLE FOR CONSULTANTS IN THE GLOBAL ECONOMY'S DECARBONIZATION

The transition to a low-carbon economy is difficult for companies because it often requires switching away from tested business models to less tried ones that take into account long-horizon climate and transition dynamics. Yet, if the planet is to avoid the worst effects of climate change, industry must embrace a new way of doing business.

Management consultants provide an important global and pan-industry perspective to help their clients decarbonize and support the transition to a low carbon economy. In its climate work, Oliver Wyman has put a special focus on helping the financial services industry embrace the transition, seeing it as an enabler in driving a sustainable transformation across multiple industries. Working with such organizations as GFANZ, the United Nations, CDP, the World Economic Forum, and major global banks, Oliver Wyman has helped put decarbonization pathways into practice. These are leading to both lower-carbon portfolios as well as underlying assets — ultimately assisting both financial institutions as well as the real-economy companies they touch.

As part of its work, Oliver Wyman collaborated with the International Association of Credit Portfolio Managers in 2023 to identify ways financial institutions can provide the innovation necessary to deliver against their commercial and climate transition goals. In the joint Oliver Wyman-IACPM report, [Realizing Climate Finance Opportunities](#), four strategies were identified that would expedite the transition, while still supporting commercial objectives:

**1. Create innovative products and services that facilitate the transition.** One example would be performance guarantees from insurance providers.

**2. Develop new deal-making capabilities that help institutions find and structure deals that better align with their risk appetites and investment profiles.** One example would be engaging with clients earlier on in the deal lifecycle.

**3. Build new risk and portfolio steering tools to improve the understanding and management of emerging risks.** For example, risk-sharing partnerships can help to achieve greater investment scale and align risk appetite with opportunities. Other techniques include re-developing financial management practices to match climate commercial objectives, such as preferred fund pricing for greener investments.

**4. Rethink organizational structures by creating low-carbon go-to market teams and hiring of non-traditional skillsets like engineers,** among several options to consider.

Consultant firms sit at a powerful intersection in the climate space because of their ability to pull in perspectives across industries and business lines as well as their ability to take a long-term approach to strategy which decarbonization requires. They can provide an important bridge between the current fossil fuel economy and the future low-carbon one.

PART II

# Decarbonization Contribution Methodologies Case Studies



## BACKGROUND

While historical and point-in-time metrics (e.g., financed emissions) provide useful insights, they may not capture the broad, whole-economy decarbonization impact of Climate Solutions nor the emissions reduction potential of high-emitting exposures. Projecting the planned, forward-looking emissions reduction of real-economy actors is an important – but underdeveloped – mechanism that can support the scaling of transition financing strategies.

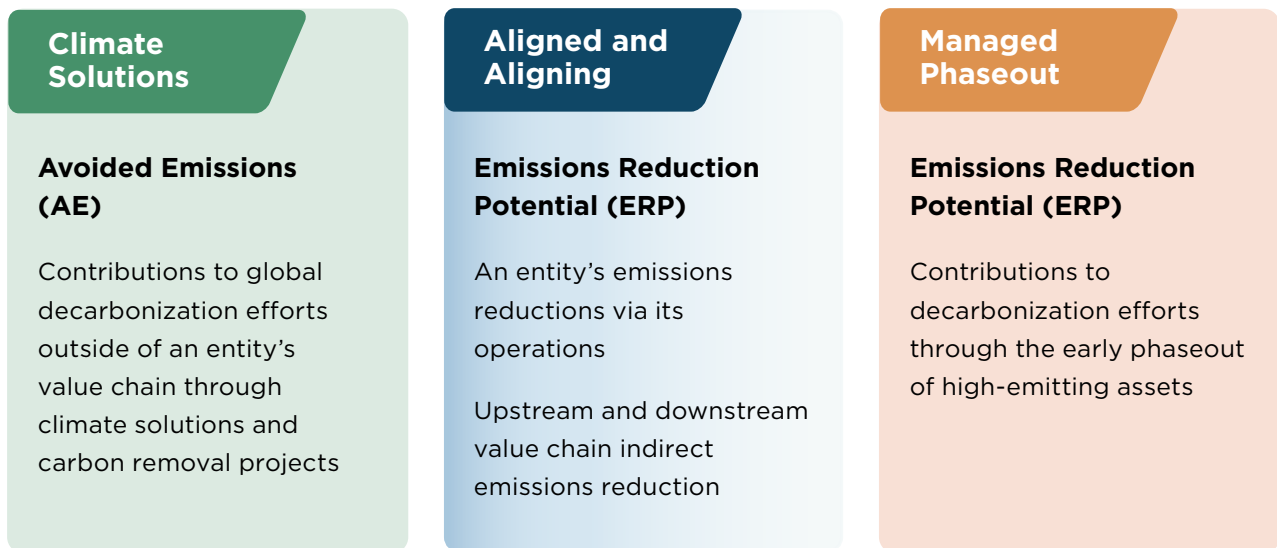
Part II of the Note introduced the concept of Expected Emissions Reduction (EER) to advance methodological development of forward-looking metrics. Similar to the “expected return” of a financing decision, the EER can be quantified to express the “emissions return” of a financing

decision by representing the unrealized emissions reduction potential of an asset or entity over a specified timeframe. The EER is a complementary measure to existing portfolio alignment measures and KPIs. It can be used to assess the decarbonization contribution potential of portfolio holdings and clients and may provide an additional lens to support mobilization of capital across the four key transition financing strategies.

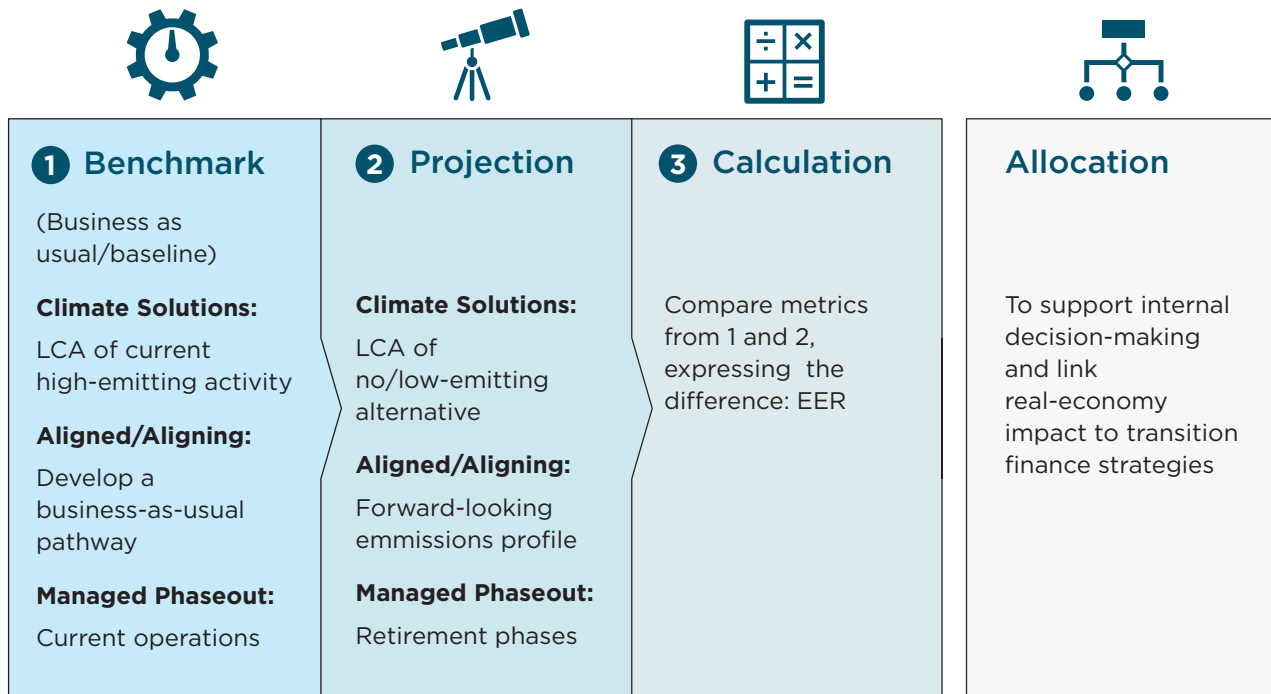
Measuring the emissions reduction impact of the four key transition financing strategies requires different approaches. The Note outlined potential quantification approaches for each of the strategies based on existing methodologies. Figure 41 shows the potential decarbonization contribution approaches by strategy.

**Figure 41: The decarbonization levers for reaching global economy net-zero GHG emissions from the Note**

The different approaches for calculating EER outlined in the Note share three methodological steps:



**Figure 42: Steps in the proposed EER quantification methodologies from the Note**



- Benchmark:** The construction of a representation of emissions in the absence of the transition-related activity
  - Projection:** The forecasting of the expected emissions due to the transition-related activity
  - Calculation:** A comparison of Steps 1 and 2, with the difference being the EER
- Allocation:** Where appropriate, the portion of an asset or entity’s EER allocated to the financial institution to support internal analyses and assessments and link the real-economy impact to transition finance strategies.

The Note recognized that, given the nascency of the concepts and methodologies to derive EER, assumptions about the calculation process, adjustments required, timing, and allocation considerations require further development. The Note highlighted the importance of piloting the EER concept by financial institutions and real-economy companies to support refinement and operationalization of potential approaches to support different use cases.



## **PURPOSE AND SCOPE OF THE PART II CASE STUDIES**

Part II of this publication features case studies contributed by financial institutions that illustrate potential use cases and methodologies for calculating EER or other forward-looking emissions proxies. The purpose is to explore how financial institutions may apply technical guidance to assist with evaluating emissions reduction potential of real-economy transactions, companies, and assets.

Case study contributors quantified the EER for sample or hypothetical assets/companies that fit within one of the GFANZ four key transition financing strategies. They calculated EER based on approaches determined to be appropriate for the example and for the context of the portfolio and potential use case(s). The approaches referred to in the case studies may include methodologies discussed in the Note, proprietary methodologies, or other existing approaches.

Part II of this publication also incorporates examples and references to relevant initiatives, resources, and tools that address areas of further

work, such as data availability and methodology development. These examples have been provided by relevant organizations and industry bodies and their purpose is to shed light on developments in the ecosystem that may fill these gaps and support adoption of EER and similar measures at scale.

The case studies presented are not meant to exemplify best practices or strict adherence to guidance around internal/external reporting and disclosure for the use and calculation of EER. The case studies in this section capture how select financial institutions may approach decarbonization contribution measurement.

By highlighting potential financial use-cases with respect to EER, the GFANZ Secretariat hopes to demonstrate how EER and similar metrics may support the scaling of Transition Finance and enable further adoption of forward-looking measures by the real economy and financial institutions.

## SUMMARY OF KEY OBSERVATIONS

Across these case studies, three core learnings on EER emerged:

1. EER can accommodate different use cases and perspectives
2. Real-economy transition plans are a key source of data for EER
3. Transparency is critically important when calculating and adopting EER

### EER can accommodate different use cases and perspectives

As discussed in the Note, the potential use cases for EER range from supporting internal assessments to external communications and reporting purposes. Through the pilot case studies in Part II, financial institutions are demonstrating that, based on existing methodologies and available data, EER is currently best suited to support internal processes, such as transaction due diligence; sensitivity analyses; performance measurement; and to inform engagement efforts with clients and portfolio companies. Additionally, the calculation approach and data used to derive EER may be influenced by how financial institutions intend to use the metric and whether it is being considered at the transaction/asset-specific level versus entity-level.

- In some instances, financial institutions may consider EER as a potential tool to inform engagement efforts with clients and portfolio companies or to communicate with external stakeholders. In such situations, EER may be approximated at the entity level using broader sector assumptions and adjustments to support strategic purposes.
- In other cases, EER is expected to complement existing KPIs and capture forward-looking impact in support of investment decision-making (e.g., diligence for new financing), and therefore more detailed data and advanced methodologies are used to quantify EER for specific assets or use of proceeds.

Irrespective of the different use cases, at its core, the process that financial institutions undertake to derive EER holds intrinsic value in allowing them to better understand the key drivers and dependencies of a client, portfolio company, or transaction with respect to their decarbonization goals.

Given the flexibility and wide-ranging potential use cases for EER, it follows that while EER may one day be able to support accounting of emissions reduction potential, it is not currently used as a strict accounting measure. Financial institutions are being transparent in how they are considering the association of their financing with the EER of their clients and portfolio companies. For example:

- Some firms have applied a more conservative approach, using established allocation methodologies and application of additionality in EER calculation.
- Other financial institutions adjusted their approach to allocating or interpreting EER based on specific decisions and intended use cases and indicated they may not allocate EER at all to their financing.
- The fact that there are variations in allocation approaches demonstrates the different causal relationship considerations firms currently see as relevant to application of the EER concept.

The GFANZ Secretariat continues to observe the nascency of methodologies that may apply in quantifying EER, and this underscores the importance of piloting/adoption of the concept by real-economy companies and financial institutions to enable further refinement of it. The GFANZ Secretariat also anticipates forthcoming developments in this area from key organizations, including PCAF, which are expected to introduce relevant guidance for consultation in the coming year.

## Real-economy transition plans are a key source of data for EER

From the case studies it is apparent that deriving entity-level EER requires a comprehensive understanding of baseline assumptions, the trajectory of the company, their targets, decarbonization levers, and other factors. This calculation process relies on a forward-looking view of these variables. Information from a real-economy transition plan, where available, that incorporates all these elements is helpful in supporting the calculation of EER.

Real-economy transition plans encapsulate how EER may be realized and, as the plans are implemented, new insights may emerge that necessitate updates to the EER. This iterative process underscores why net-zero transition plans were highlighted in the Note as a critical factor for financial institutions to consider when conducting due diligence on a client or portfolio company's net-zero commitment as part of the calculation of entity-level EER.

Furthermore, real-economy transition plans that are benchmarked to scenarios and pathways (such as the IEA's NZE) may help to inform baseline assumptions, time horizons for EER calculation, and technological adoption curves and may enable EER to serve as a complementary measure for tracking performance over time.

### BOX 15. GFANZ NZTP FRAMEWORK — METRICS AND TARGETS

The GFANZ NZTP framework's Metrics and Targets theme outlines that companies can consider using a range of metrics and targets most appropriate for tracking progress in the implementation of their transition plans.<sup>63</sup> In this context, real-economy companies may incorporate EER as part of their transition plans (e.g., entity-level and/or for specific decarbonization levers) to complement GHG emissions metrics and targets and to provide additional details on the expected impact of their Implementation Strategies. Financial institutions may find it useful to consider EER metrics provided by clients and portfolio companies as complementary measures in informing their own transition plans and to support other use cases.

## Transparency is critically important when calculating and adopting EER

As discussed in the Note, it is important to recognize that the concept of EER remains in its formative stages and as observed in the case studies in Part II, it may be characterized by flexibility in its application across various use cases. Given this context and recognizing that EER is inherently forward-looking and projective in nature, the GFANZ Secretariat reiterates the importance for both real-economy companies and financial institutions to have a high level of transparency in its adoption and calculation, where appropriate. This transparency may encompass, for example, the underlying inputs and assumptions, the calculation and allocation methodology employed, and the specific application and interpretation of EER within the given context.

<sup>63</sup> For further details, refer to GFANZ Secretariat. [Recommendations and Guidance on Financial Institution Net-zero Transition Plans](#), Nov. 2022.

Such transparency may serve several important purposes. It aids in the refinement of potential EER methodologies by providing valuable insights into their application. The exercise of documenting and understanding inputs and assumptions can enable financial institutions to better understand key dependencies of their clients and portfolio companies' net-zero goals. It also establishes a basis for accountability over time and facilitates ongoing monitoring and refinement of EER as market conditions, baseline assumptions, and input data mature and evolve.

It is important to note that transparency, as discussed, does not necessarily equate to formal external reporting and disclosure. Transparency may involve clear and open communication between internal teams as well as with clients and portfolio companies. Whether EER is used by financial institutions to inform implementation and engagement strategies that involve different teams, or by real-economy companies to support capital expenditure asks, being transparent about assumptions and methodologies in deriving EER and other forward-looking measures is crucial for fostering trust and accountability. Additionally, transparency in how EER is calculated and used by financial institutions may help real-economy companies understand the data requirements and potentially enable them to provide the necessary data and/or EER metrics to support financing and investment requests in the future.

#### BOX 17. PRINCIPLES

In the Note, the GFANZ Secretariat has identified five principles commonly found in climate change guidance that support the quantification of decarbonization contribution. The principles set out below are intended to be helpful considerations when applying the EER concept:<sup>64</sup>

- Be transparent and verifiable;
- Link to net-zero transition;
- Be consistent over time;
- Balance conservativeness, science-based, and practicalities; and
- Support action in a timely manner.

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64 GFANZ Secretariat. [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023.

# Decarbonization contribution methodology case studies

Aligned & Aligning

## 19. DAI-ICHI LIFE INSURANCE

**Sector:** Insurance (Asset Owner)

**HQ Geography:** Asia Pacific

**Firm Overview:** Dai-ichi Life is a large life insurance company in Japan and the core entity of Dai-ichi Life Group, a global life insurance group. Dai-ichi Life has a total of JPY 36 trillion on its stand-alone balance sheet at the end of March 2024.

In March 2021 Dai-ichi Life joined the Net Zero Asset Owner Alliance (NZAOA).

In its transition plan, Dai-ichi Life committed to net zero by 2050 and has set its mid-term target for financed emissions by 2025 and 2030. Dai-ichi Life has a target for climate related investments of JPY 1 trillion.

**COMPANY A** *(the company name has been withheld because this case study includes undisclosed information in a public document)*

**Sector:** Shipping industry

**Company/asset/project geography:** Global (head)

**Company/asset/project description:** Confidential

**Type of transaction or nature of FI relationship:** Dai-ichi Life invested in label bonds and corporate bonds issued by Company A. The use of proceeds of the label bonds is to invest in vessels that are one of the key assets it needs to deliver its transition plan. In addition, as a corporate bond holder, Dai-ichi Life also engages with Company A about decarbonization of its business model.

### About Company A

Company A manages an international shipping business. Company A committed to net-zero, developed its transition plan, and acquired an SBT certification for net-zero. Company A has been actively implementing its net-zero transition plan and has disclosed its activities to investors using key performance indicators (KPIs). Therefore, Dai-ichi Life's investment in Company A would qualify as Aligned/Aligning in the GFANZ four key transition financing framework, though Dai-ichi Life has not formally assessed the classification of its investments against the framework.

Dai-ichi Life defines Transition Finance as financing across its portfolio that proactively supports investee companies' long-term transition to reduce GHG emissions to realize a decarbonized society. Based on this view, with regards to its investment in Company A, the label bonds are qualified as Transition Finance, but corporate-level investments (i.e., corporate bonds) are not. Therefore, measuring only the label bond EER aligns with Dai-ichi Life's Transition Finance view.

In this case study, Dai-ichi Life applies the decarbonization contribution methodology (the DCM) to a portfolio company. Typically, Dai-ichi Life measures EER for label bonds and corporate bonds using the general EER metrics for Aligned/Aligning. In the case of Company A, however, it applies label bond EER metrics that are based on EER factors for the vessels. These metrics are different from general EER metrics applied for Aligned/Aligning, which uses baseline GHG emissions and GHG emissions projections.

Dai-ichi Life calculates EER using the following two different approaches:

1. **Approach 1:** Measure EER from the assets acquired using the proceeds of Company A's label bonds. This approach measures EER from the investments that are directly used for Company A's net-zero transition. This approach aligns with Dai-ichi Life's transition financing strategy.
2. **Approach 2:** Measure EER from label bonds and corporate bonds issued by Company A. This approach calculates EER from all investments that directly or indirectly contribute to Company A's transition.

Company A is a Dai-ichi Life portfolio company but to keep Company A anonymous, and because of data limitations, the assumptions, figures, and other information in this case study may have been modified. Therefore, the real EERs applicable to Company A may be different from the results shown in this case study. In this case study, it is assumed that the EER is measured at the end of March 2024.

## Approach 1

### Expected avoided emissions per year

Dai-ichi Life invests in Company A's label bonds, the proceeds of which go toward Company A's investment in vessels to decrease their GHG

emissions. Based on Company A's disclosure and assumptions made by Dai-ichi Life, Dai-ichi Life projects the EER factor of the investment is 7,600 tons of CO<sub>2</sub>e (t-CO<sub>2</sub>e) per year.

### Time horizon for EER measurement

There are two views on the time horizon of EER measurement. The first view is that the time horizon should be the same as the duration of the label bond because the financing support is terminated at the maturity date. The other view is that the time horizon should be determined by the economic life of assets that are funded from the label bonds. This view is based on the notion that investee companies may not be able to invest in the assets without funding from the label bonds.

In Company A's case, funding from the label bonds supports the majority — but not all — of the investment amount of the vessels; and, it is assumed that Company A may not invest in the vessels without issuing the label bonds. Therefore, in this case study, the time horizon used for EER measurement is the economic life of the vessels. Dai-ichi Life assumes that the economic life of all vessels is 20 years, though the real economic life is different for each vessel.

### EER measurement and attribution to Dai-ichi

The construction cost of the vessels has not been disclosed, but, using general market data, Dai-ichi Life projected that the amount it invested in the label bonds accounts for 2.2% of the construction cost. It is assumed that the vessels are deployed starting April 2024. For simplification, Dai-ichi Life does not apply discounting to the EER calculation.

Based on the data above, the EER attributed to Dai-ichi Life is as follows:

$$7,600 \text{ tCO}_2\text{e} \times 20 \text{ years} \times 2.2\% = 3,263 \text{ tCO}_2\text{e}$$

## Approach 2

### Baseline GHG emissions

Baseline GHG emissions represent future GHG emissions of Company A without Transition Finance — the business-as-usual (BAU) situation. It is expected that assumptions and input data are specific to Company A's GHG intensity and activities under the BAU condition. However, given data limitations, Dai-ichi Life uses the following assumptions and data:

- Company A's GHG intensity to revenue ratio is used to estimate its baseline GHG emissions.
- Company A has been improving its GHG intensity to revenue ratio. As government policies and regulations request further decarbonization, it is expected that Company A will decrease its GHG intensity to revenue

ratio, even if there is no Transition Finance. The historical GHG intensity to revenue ratio is volatile, so, to normalize the volatility, Dai-ichi Life calculates the average year-over-year percentage change of improvement rate of GHG intensity to revenue from 2018 to 2022. Dai-ichi Life assumes that after that, the average improvement rate will continue until 2050.

- For future revenue projection, Dai-ichi Life assumes that the annual rate of Company A's revenue is represented by the annual rate increase of the IEA's economic and activity indicators for the shipping industry, described in the [Net Zero by 2050](#) scenario. The annual rate increase is 3.2% from 2023 to 2030 and 4.1% from 2030 to 2050.
- For simplification, Dai-ichi Life does not apply discounting to the EER measurement.

**Figure 43: Summary of Company A's baseline GHG emissions**

YEAR <sup>65</sup>	2025	2030	2040	2050
GHG emissions (t-CO <sub>2</sub> e)	11,148,338	8,839,731	6,193,536	4,893,371

### Projections

Since Company A acquired SBT certification and its transition plan is verified as a science-based net-zero transition plan, Dai-ichi Life uses Company A's net-zero transition plan for the forward looking GHG emissions projection. Company A's policy regarding the use of carbon credits near 2050 is not clear and, for simplicity, Dai-ichi Life assumes that Company A's absolute GHG emissions reach net-zero in 2050.

**Figure 44: Summary of Company A's GHG emissions projection**

YEAR <sup>66</sup>	2025	2030	2040	2050
GHG emissions (t-CO <sub>2</sub> e)	10,831,643	7,166,801	3,583,401	0

65 Note: For confidentiality reasons, base year emissions are not included in this case study.

66 Note: For confidentiality reasons, base year emissions are not included in this case study.

### Total EER Calculation

Company A’s EER is calculated as the difference between baseline emissions and projected emissions, which is shown in Figure 45.

**Figure 45: Company A’s EER per year**

YEAR	2025	2030	2040	2050
Baseline (t-CO <sub>2</sub> e)	11,148,338	8,839,731	6,193,536	4,893,371
Projections (t-CO <sub>2</sub> e)	10,831,643	7,166,801	3,583,401	0
<b>EER per year (t-CO<sub>2</sub>e)</b>	<b>316,695</b>	<b>1,672,930</b>	<b>2,791,893</b>	<b>4,893,371</b>

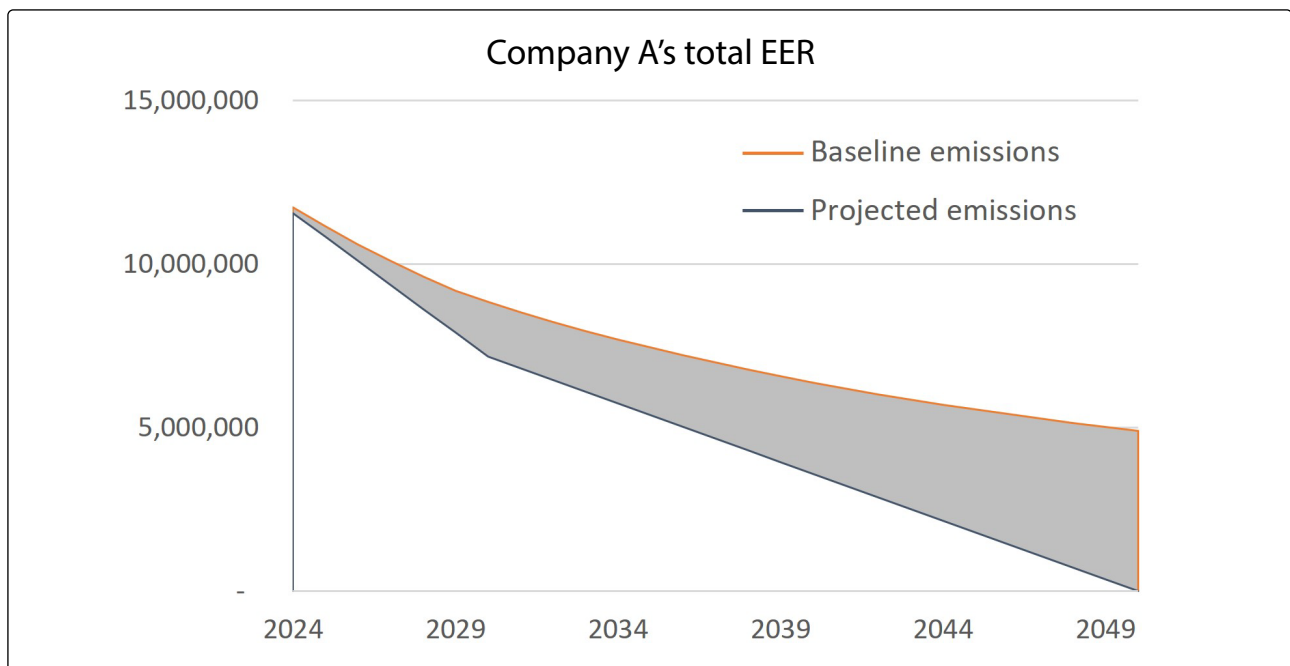
Regarding the time horizon for EER, for simplification of EER measurement, Dai-ichi Life assumes that corporate bonds will be refinanced by 2050. The economic life of the vessels – 20 years – is applied for the label bonds, which is the same figure used under Approach 1. Therefore,

total EER is calculated by accumulation of the annual EER from 2024 to 2050 for corporate bonds and from 2024 to 2034 for label bonds. Figure 46 summarizes the total EER for corporate bonds and label bonds.

**Figure 46: Total EER by asset class**

DURATION	2024-2050 (CORPORATE BOND)	2024-2034 (LABEL BOND)
Total EER (t-CO <sub>2</sub> e)	66,331,372	36,888,323

**Figure 47: Company A’s total EER under Approach 2**





### Attribution to Dai-ichi Life

Dai-ichi Life uses attribution factors that represent the percentage to Company A's

enterprise value at the end of March 2024: the attribution factors with respect to corporate bonds is 0.03% and for label bonds it is 0.07%.

Using these attribution factors, the allocated EER to Dai-ichi Life is as follows:

<p><b>EER from corporate bonds:</b>  <math>66,331,372 \text{ tCO}_2\text{e} \times 0.03\% = 17,546 \text{ tCO}_2\text{e}</math></p>
<p><b>EER from label bonds:</b>  <math>36,888,323 \text{ tCO}_2\text{e} \times 0.07\% = 26,486 \text{ tCO}_2\text{e}</math></p>
<p><b>Total EER:</b>  <math>26,486 \text{ tCO}_2\text{e} + 17,546 \text{ tCO}_2\text{e} = 44,032 \text{ tCO}_2\text{e}</math></p>

### Comparison of EERs by Approach 1 and Approach 2

Figure 48 presents the allocated EER to Dai-ichi Life based on Approach 1 and Approach 2.

**Figure 48: Summary of EER based on the approach used**

	APPROACH 1		APPROACH 2	
	TOTAL	ATTRIBUTED TO DAI-ICHI LIFE	TOTAL	ATTRIBUTED TO DAI-ICHI LIFE
EER (t-CO <sub>2</sub> e)	152,000	3,263	66,331,372	44,032

EER calculated under Approach 1 is smaller than the EER calculated using Approach 2. This is because Approach 1 calculates EER only for label bonds, while Approach 2 measures EER from all investments.

The annual EER calculated under Approach 2 increases each year. Though simplified assumptions are used for Approach 2, the increase of the annual EER may suggest that Company A should invest further in decarbonization and develop new technology to achieve its net-zero target.

## Challenges for EER measurement

The following challenges have been identified in measuring EER using Approach 1 and Approach 2:

- **Scope of investment for EER measurement (definition of “contribution”)**

As shown in Figure 48, total EER is different using Approach 1 (152,000 t-CO<sub>2</sub>e) and Approach 2 (66,331,372 t-CO<sub>2</sub>e) — this difference comes from the scope of EER measurement as Approach 1 calculates EER only for the use of proceeds of the label bonds; on the other hand, Approach 2 measures EER for Company A as a whole.

The purpose of DCM is to quantitatively project a financial institution’s contributions to decarbonization through its investee companies, thus the scope of EER should be aligned with the financial institution’s Transition Finance strategy, especially from a stakeholder communication perspective. In this case study, EER calculated using Approach 1 is expected to be of greater interest to Dai-ichi Life’s stakeholders, even though its EER is smaller than Approach 2’s, because Approach 1 aligns with Dai-ichi Life’s transition financing strategy. Furthermore, when all financial institutions disclose EERs using common metrics, the definition of contributions should be defined and EER metrics should align with the definition.

- **Credibility of assumptions**

EER measurement requires long-term, complex assumptions, so attention to the credibility of the assumptions is important. For example, in Approach 1, EER could be volatile because it is impacted by future business activity, but credible projections of future business activity pose significant challenges in practice. Approach 2 uses intensity-based GHG emissions for baseline and, in practice, credibility assessment of the intensity-based GHG emissions may not be easy to assess because the baseline scenario is a fictional scenario. Therefore, in the DCM development process, methodologies used to assess credibility of assumptions should also be discussed.

- **Resources for EER measurement**

In this case study, simplified EER metrics are used, nevertheless, EER measurement requires a certain amount of resourcing, even if a financial institution calculates EER only for its major investee companies.

It would be worth involving data vendors and real-economy companies in DCM development to find practical metrics for DCM calculations.

## Use cases

Dai-ichi Life identified the following use cases as part of this case study exercise:

- 1. Transition finance impact disclosure**

When a financial institution invests in a high-emitting company, the financed emissions may temporarily increase until the investee company implements the decarbonization of its facilities and/or manufacturing process. In stakeholder communications, the financial institution can explain the temporary financed emissions increase to its stakeholders by using EER as a key indicator of forward-looking decarbonization impact.

- 2. Sensitivity analysis about decarbonization impact using EER assumptions**

DCM uses complex assumptions to measure EER and these assumptions could be used for EER sensitivity analysis. EER sensitivity analysis could provide insight about important dependencies and factors used by investee companies, such as key assumptions, or risks inherent in transition plans. In addition, sensitivity analysis could provide useful information to support assessment of the credibility of investee companies’ transition plans. Engagement is a useful tool for asset owners to accelerate net-zero transition of investee companies. Findings from the sensitivity analysis could enable deeper dialogue with investee companies about opportunities and risks of decarbonization.

- 3. Reference information in investment decision-making**

The more our society requires decarbonization across sectors, the more financing opportunities should arise as real-economy companies will have further financing needs for their transition. Generally, a financial institution assesses investment opportunities from both a financial and non-financial perspective. Currently, qualitative non-financial assessment needs further improvements and EER could be used as a quantitative complementary KPI for non-financial assessment.

## 20. ENERGY IMPACT PARTNERS

**Sector:** Energy Transition

**HQ Geography:** United States and Europe

**Firm Overview:** Energy Impact Partners LP (EIP) is a strategic investment platform focused on financing and growing a broad suite of Climate Solutions and enabling technologies. Its three major investing themes are: decarbonized supply; intelligent infrastructure (contributing to decarbonization); and sustainable demand. Within these categories it invests in many types of carbon-free energy sources and storage technologies, including solar technologies, geothermal technologies, and long-term electricity and renewable heat storage. In intelligent infrastructure its investments include transmission line construction and management technologies, grid edge sensing technologies, methane monitoring, and grid cybersecurity. In sustainable demand it invests in building energy efficiency, decarbonized steel and cement, and low-carbon home heating and cooling.

EIP co-founded and serves on the steering committee of both Project Frame and the Venture Climate Alliance.

### METAFUELS AG AEROBREW (METAFUELS)

**Sector:** Sustainable Aviation Fuel

**Company/asset/project geography:** Headquartered in Switzerland — global market

**Company/asset/project description:** Metafuels, headquartered in Switzerland, uses a highly efficient new process to make Aerobrew, a scalable decarbonized aviation fuel produced from sustainable methanol. Sustainable methanol is produced from combining CO<sub>2</sub> sourced from biogenic feedstock (i.e., carbon dioxide naturally absorbed from the atmosphere) and green hydrogen. Metafuels is at technology demonstration/pilot production stage and it expects to start construction of its first commercial Aerobrew plant in early 2026 and to begin commercial shipments in 2028.

**Type of transaction or nature of FI relationship:** EIP is focused on direct equity investments and private credit for companies that are in the late venture stage or in early- to middle-growth stages, post commercial market entry. EIP invests in equity and/or a variety of forms of debt.

### 1. Identify the timeframe

The timeframe for EIP's baseline scenario or benchmark (these terms are used interchangeably here) corresponds to the lifetime of the impact of the solution/enabler that EIP is investing in once the solution is in the marketplace, but no further than 2050. For example, solar panels installed today will likely be operational through 2054, but EIP would not ordinarily create a baseline for comparison past 2050 since it assumes marginal grid emissions will reach net zero by then. Conversely, some energy efficiency technologies (such as thermostats) have lifetimes shorter than

ten years, so EIP does not need a baseline longer than ten years after it exits the investment. In practice, most of the technologies EIP invests in displace grid electricity, motor fuels, or natural gas used for process or building heat, so EIP draws heavily on a relatively small number of baselines for these products.

For companies that have not yet begun commercial shipment of product, EIP estimates carbon savings over the projected first five years of sales. This is an extremely conservative approach grounded in its high level of confidence that, over the first

five years of sales, the baseline scenario has much greater specificity and certainty.

#### **Metafuels Aerobrew Example**

Because Aerobrew is not yet sold commercially, the time frame EIP used for its savings calculation extends to 2032, five years past commercial operation, which is expected in 2028.

## **2. Define the baseline scenario**

EIP structures its avoided emissions (AE) calculations in the traditional form of: AE per unit (intensity) x amount of baseline product displaced by the solution. This makes it necessary to estimate only baseline unit intensities, not the aggregate emissions from any sector, total baseline product sales, or other aspects of the baseline.

For the major energy product baselines, baseline scenario emissions intensity (i.e., emissions per unit of product used) is the combined effect of a vast number of policy and technology developments. Rather than specify each assumption that contributes to emissions intensity in each baseline, EIP tends to make assumptions regarding the net aggregate effect of all policies and technologies on baseline intensity. For example, EIP ordinarily assumes that the national average carbon intensity of the US power system will decline linearly to zero by 2050 — this assumption is based on studies of decarbonization efforts across all industries, as well as studies of decarbonization trajectories and pathways. This assumption aggregates the net effects of US federal policies, state policies, transmission system development, and the technological and cost evolution of a wide variety of generation, storage, and delivery technologies.

EIP employs the overall approach explained above, but it accounts for regional differences where it believes the emissions intensity in the baseline differs significantly between national or global averages and the areas in which the

climate solutions will be sold. For example, EIP's baseline for electricity emissions begins with the actual current US state or EU country emissions intensity and then assumes a linear decline to net zero. Conversely, where the regional provenance of a product is not traceable, i.e., the product is sold in a homogeneous global market, EIP employs global averages. In other words, even when EIP aggregates the effects of all policies and technologies to produce a baseline intensity, that intensity is adjusted to be regional if the structure of the market is regional and data allows.

For the baseline, EIP's main sources for the calculation are academic literature, environmental agencies, libraries of life-cycle assessments (LCAs), in-house research, and use of input-output model databases. On occasion, EIP's portfolio companies' experts also help. EIP uses the same sources of data throughout the full calculation methodology (including for projections) to establish a standardized approach to the inputs and values incorporated into its methodology.

Because EIP's main focus is on clean energy transition technologies, it studies energy product markets intensively. As a result, it has not yet found it necessary to use a BAU pathway scenario in lieu of a product-specific baseline scenario.

#### **Metafuels Aerobrew Example**

Aerobrew is an almost identical substitute for fossil-based aviation fuels. Under current aviation rules, it can substitute gallon-for-gallon for up to half of the total fuel consumed in any one aircraft. The baseline scenario is the continued use of 100% fossil-derived aviation jet fuels over the next five years. While some air carriers may use biofuels or other replacements for conventional jet fuel, Metafuels' product would only make sense as a substitute for fossil-derived jet fuel, not as a head-to-head competitor with other sustainable aviation fuel (SAF) products.

### 3. Assess baseline life-cycle emissions

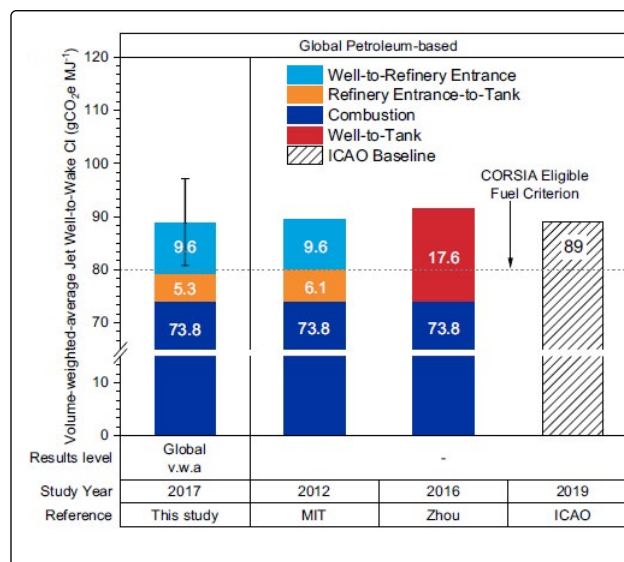
EIP re-examines its baseline assumptions at least each year when it updates its AE calculations. For example, it recalibrates its pathway to net zero from each electricity region based on updated actual intensities in that region, if the intensities have been reported. Similarly, if a technological breakthrough or regulatory change has occurred that merits a revision of the aggregate baseline, EIP changes the baseline accordingly.

EIP does not formulate its baseline scenario in a distinct, two-step process in which it first lists a number of assumptions and then embarks on modeling the emissions effect of the assumptions. Its “reduced form” baseline formulation is inherently quantitative. Thus, the effect of its baseline assumption changes translate directly into changes in baseline life-cycle (LC) emissions.

#### Metafuels Aerobrew Example

The life-cycle carbon emissions from aviation fuel have been thoroughly documented in several studies. EIP uses 89 g CO<sub>2</sub>e/Megajoule as the baseline LCA emissions for jet fuel (see rightmost bar in Figure 49), or 3.9 kg CO<sub>2</sub>e per kg jet fuel.<sup>67</sup>

**Figure 49: Life-cycle emissions from fossil-based aviation fuels<sup>68</sup>**



Source: [Jing, et al \(2022\)](#)

Four estimates of the life-cycle emissions from aviation fuels. EIP uses the ICAO estimate of 89 g CO<sub>2</sub>e/MJ, the ICAO 2019 figure. The figure shows there is very little variation in estimates for this product.

### 4. Assess solution life-cycle emissions

EIP determines the life-cycle emissions of the solution using the same types of data sources it used to determine the baseline. For this part of the calculation, EIP relies on its in-house researchers, external experts, and experts within the portfolio company itself.

Over time, EIP updates its internal forecast models. Its assumptions and data regarding the solution may change if, for example, the sales forecast of

67 Liang Jing, et al. Understanding variability in petroleum jet fuel life-cycle greenhouse gas emissions to inform aviation decarbonization. [Nature Communications](#), Dec. 2022

68 This figure is based on the Carbon Offsetting Scheme for International Aviation (CORSIA) scheme, described by Jing as follows: In response to mounting climate concerns, the Carbon Offsetting Scheme for International Aviation (CORSIA) was adopted as a voluntary carbon offset and emissions reduction program in 2016 and has been applied to international aviation since 2019. As a global market-based measure, CORSIA can assist the International Civil Aviation Organization’s (ICAO’s) goal of carbon-neutral growth via CORSIA-eligible fuels (CEFs) to reduce the industry’s emissions offsetting requirements.

a company varies; the company unlocks more efficiency from its product; or the company has more specific information, such as an internal LCA. Every year EIP reports on the actual impact or enabled savings of its portfolio companies at the individual level.

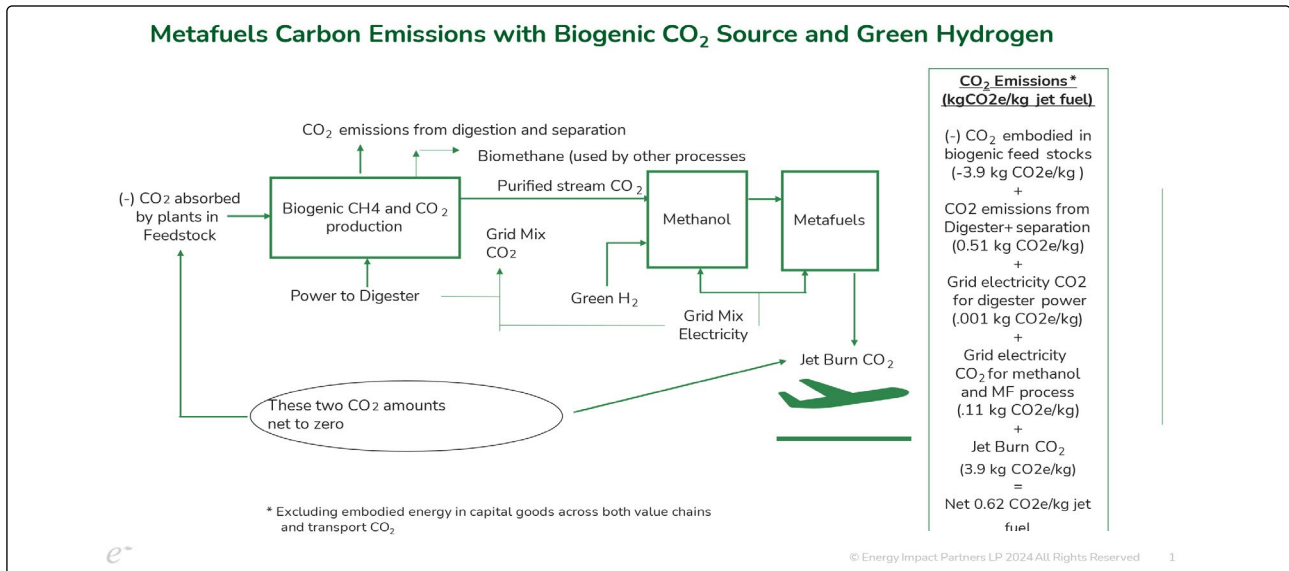
If assumptions have changed, it will likely impact the calculation of the baseline life-cycle emissions. When this happens, EIP incorporates the new assumptions as part of its annual impact calculation updates prepared for its Annual Impact and ESG Performance report.

**Metafuels Aerobrew Example**

As shown in Figure 50, Metafuels’ carbon emissions over its production cycle (excluding capital stock embodied energy) equals the sources of GHGs detailed, offset by the carbon absorbed by the biogenic feedstock. These emissions are the sum of: GHG emissions from fuel and electricity use during the creation and separation of biogas into biomethane and the pure CO<sub>2</sub> feedstock used by Metafuels; emissions associated with the hydrogen input to methanol production; and emissions associated with electricity used in the methanol and Aerobrew processes (there is no fuel burned in these processes). In the 2024 calculations, GHG emissions from fuel and electricity used during biogas creation and separation were .51 kg CO<sub>2</sub>e/kg jet fuel; the emissions from hydrogen production were zero because Aerobrew will be produced from green (i.e., zero-emissions) hydrogen; and emissions from electricity use for methanol/Aerobrew production were .11 kg CO<sub>2</sub>e/kg jet fuel. These emissions sum to a net amount of 0.62 CO<sub>2</sub>e/kg jet fuel. Because the biogenically absorbed CO<sub>2</sub>e equals the emitted CO<sub>2</sub>e from jet fuel burn (both are 3.9 CO<sub>2</sub>e/kg jet fuel) these two amounts cancel out and the net overall emissions from the Aerobrew process is 0.62 CO<sub>2</sub>e/kg jet fuel.<sup>69</sup>

69 According to Metafuels, Aerobrew creates slightly fewer airborne combustion products than conventional jet fuel and therefore slightly lower global warming potential, but EIP does not factor these benefits into its calculation.

**Figure 50: Overview of Metafuels life-cycle carbon emissions**



Source: Energy Impact Partners

## 5. Assess potential EER (if Enabler – associated EER)

To source data for Climate Solutions, EIP works with experts in its climate solutions companies, as well as its 20-person in-house research team to examine proprietary data from the company and data from published sources. A few sources EIP has used in recent models include the EIA, Carbon Direct, EPA, and specific consulting and academic literature related to a specific solution (biomass, electricity consumption for home heating and cooling).

Accounting for end use and upstream emissions in the LCA can be challenging. In some cases, EIP is successful in accounting for them, but in other cases it finds alternatives. EIP first focuses on which phases of the life-cycle of the baseline product's emissions profile are altered by the solution. For example, if the solution is likely to have

approximately the same upstream or embodied energy, but emits far less emissions when used (such as an electric lawnmower replacing a gas mower), EIP may focus on the use phase of the life-cycle and it would not do comparative emissions calculations for the other phases. In other cases, where EIP believes that emissions may vary significantly in multiple phases of the product life-cycle, EIP attempts to find data to include all relevant (i.e., significantly different) phases.

In some cases, the uncertainty regarding a specific value warrants creating sensitivity cases, or perhaps multiple scenarios. AE-EER should be used with other measures/KPIs, where appropriate. To EIP, avoided carbon emissions is its single most important impact KPI, but its investment thesis also synergistically includes the goals of energy system reliability, resilience, and community economic developments. EIP reports these KPIs in its annual impact report.

### Metafuels Aerobrew Example

The EER is the difference between the LCA CO<sub>2</sub> emissions from conventional jet fuel and calculated emissions from the Aerobrew process:

$$3.9 \text{ kg CO}_2\text{e} / \text{kg conventional jet fuel} - 0.62 \text{ kg CO}_2\text{e} / \text{kg Aerpbrew} = 3.28 \text{ kg CO}_2\text{e} / \text{kg jet fuel}$$

Without accounting for ownership weighting, EIP expects Aerobrew jet fuel to save approximately 5.2 million metric tons of CO<sub>2</sub>e in its first five years of production.

## 6. Allocate EER to portfolio

Allocation of EER begins with the threshold question of attribution, i.e., did the investing activity as a whole have a credible, identifiable causal effect on changes in emissions. If the investing activity has significant impact on enabling an alternative product life-cycle whose emissions differ from the baseline, EIP says this investing activity has enabled emissions savings. The key criteria for determining whether an investment has a measurable impact on emissions are:

1. The physio-economic chain of causality between the investment itself and reduced carbon (in simple terms, how much carbon will be saved if more of the invested product is made and sold and how can you be sure of it?); and
2. The degree of causality between the particular investment EIP is making along what could be a complex value chain and the impact of EIP's funding on the physio-economic chain. If EIP's investment is very remote from changes in the production process, EIP does not believe it is proper to attribute carbon savings to the investment. For example, if EIP were to finance a company that made screws and bolts that happened to be used to assemble solar panels, it would not say that its investment was direct enough to attribute any savings, even though it is clear that solar panels reduce carbon emissions.

EIP's criteria for determining which of its investments qualify for measuring and attributing carbon savings, which it calls its Directly Measurable companies, can be defined as a form of additionality. However, EIP regards its criteria as a threshold condition that is less than traditional additionality, though it is more significant than no causality at all. In the classical definition of additionality it is necessary to prove that the carbon-saving activity simply would not have occurred were it not for the actor's action. Under EIP's criteria it is not necessary to prove that no one else would have done the investment had EIP not done it. Instead, EIP seeks to prove that the investment, once made, does have clear, causal, and legitimately measurable impacts.<sup>70</sup>

Once attribution has been established, EIP follows PCAF's attribution framework. In brief, it attributes the enablement of the share of the total enabled AE of the investment equal to the current share of the company's total invested capital provided by EIP.

### Metafuels Aerobrew Example

EIP's ownership share of Metafuels is confidential, but that ownership share is applied to Metafuels' estimated five year avoided energy estimate when EIP reported the ownership-weighted enabled savings by fund in its [2024 EIP Impact and Performance Report](#).

<sup>70</sup> For further discussion of this, see EIP's white paper, [Know Your Impact](#), Nov. 2022.



## Use cases

EIP uses AE-EER for several purposes. In the pre-investment diligence period, EIP creates a preliminary estimate of AE to present to its Investment Committee. This estimate is considered along with other factors in the decision as to whether to invest. Though EIP does not have a bright-line threshold level of AE required to allow investment, it strives to select companies whose products/services significantly impact the clean energy transition, and AE is one key measure of impact.

AE related to investees is factored into a dashboard that is used firm-wide for annual compensation incentives of senior staff. EIP shares its annual AE numbers with each individual company, and many of its companies use these figures as part of their marketing materials or in conversations with customers and other stakeholders.

All of these calculations are reported by EIP in its annual report, and some are featured as case studies that are standalone or within the annual report. EIP updates its calculations of AE for all Directly Measurable investments once each year, and this updated number is used to report progress to EIP investors and other stakeholders. Furthermore, the updated numbers are part of the basis for ongoing discussion with portfolio companies regarding whether they are on track to achieve their goals, and what can be done to improve their performance. EIP does not differentiate in the avoided emissions metrics it uses internally and externally. It publishes its annual impact calculations publicly for all stakeholders.

## Other discussion

As noted, EIP has a large in-house research team and a large network of experts within its limited partnership base. The Impact and Sustainability team, which computes AE for all investments firm-wide, is now in the process of integrating into the Research team to better tap the synergies between the two teams.

EIP engineered its entire process of quantifying and evaluating AE during diligence and then reporting on it annually. It now has a relatively standardized due diligence carbon impact measurement process and a larger annual carbon impact measurement process. Both of these have involved creating process checklists, customized reporting forms, databases, and reporting frameworks.

The lessons EIP has learned from its years of computing AE across its portfolio include the following:

- Set expectations with investees regarding the objective of measuring AE together each year;
- Include provisions in financial documents that make this feasible; and
- Recognize that significant technical expertise is required to compute AE for some technologies, and create a function that includes this expertise in some fashion.

### BOX 17. A FRAMEWORK FOR UNDERSTANDING CURRENT AND FUTURE CO<sub>2</sub> EMISSIONS FOR THE UPSTREAM OIL AND GAS INDUSTRY

The decarbonization of the oil and gas industry and the transition away from fossil fuels is essential to reducing CO<sub>2</sub> emissions, yet oil and gas production continues to increase world-wide. The impacts of the industry's upstream operations remain poorly tracked by the market. In particular, methane emissions from upstream activities are underreported and provide a significant opportunity for decarbonization.<sup>71</sup>

Bloomberg Intelligence's (BI) Upstream Oil and Gas Emissions Tracker (the tracker) provides a company-level benchmark of current CO<sub>2</sub>e, historical, and forecasted: intensity, production, and emissions for nearly 100 companies with market-capitalization minimums of US\$ 750 million. The tracker covers roughly 60% of global oil and gas output. The information in the dataset corresponds to roughly 3.5 billion metric tons of emissions over a 100-year time horizon warming potential, and provides unique clarity into the industry's shifting dynamics. Calculations are also provided using a 20-year time horizon for methane's warming potential.

Data related to emissions and production are provided for the US, Canada, and globally. The tracker provides forecasted emissions and emissions intensity, based on company-stated targets (for intensity reduction) and broker consensus data on production (for activity metric). While consensus data is available for other CO<sub>2</sub>-intensive industries, including steel, refining, airlines, automobiles, and chemicals, the tracker focuses specifically on upstream oil and gas and on quantifying the extent of the industry's methane emissions. The tracker also aggregates production and emissions from the private oil and gas industry, thereby identifying the most CO<sub>2</sub>e intensive source of oil and gas production, and the most impactful target for meaningful decarbonization and tangible Expected Emissions Reduction (EER).

While the tracker does not directly account for Scope 3 emissions from oil and gas, it does capture current and planned renewables and carbon capture and storage (CCS), and the associated emissions saving. This calculation combined with CO<sub>2</sub>e associated with oil and gas production can give an intensity or absolute-based view into which companies are decarbonizing against the backdrop of increased production.

<sup>71</sup> Upstream operations are basically the initial phases of oil and gas production, for example, exploration, drilling, and extraction.

**Figure 51: A look at the Upstream Oil and Gas Tracker for BP**

The figure provides a snapshot of the data set and the various data points that are available to identify baselines and forecasts.

Company Name	Metric	2020	2029	2028	2027	2026	2025	2024	2023
BP PLC	Intensity (g CO2e/BOE)	12.34	12.72	13.13	13.56	14.04	14.56	15.14	15.8
BP PLC	Net Scope 1 & 2 Intensity (g CO2e/BOE)	-18.49	-10.49	-4.91	-76	2.69	5.18	7.52	9.48
BP PLC	Scope 1 Emissions - CO2 (mt CO2)	10,045.01	10,474.7	10,806.05	11,234.83	11,416.6	11,748.09	11,956.73	12,100.21
BP PLC	Scope 1 Emissions - CH4 (mt CO2e)	249.98	312.48	390.59	488.24	610.3	762.88	953.6	1,192
BP PLC	Scope 1 & 2 Emissions (mt CO2e)	10,294.99	10,787.17	11,196.65	11,723.08	12,026.9	12,510.97	12,910.33	13,292.21
BP PLC	Renewables & CCS (mt CO2e)	-27,643.1	-21,527.58	-17,239.07	-14,071.53	-11,467.95	-9,289.01	-7,715.66	-6,189.88
BP PLC	Net Scope 1 & 2 Emissions (mt CO2e)	-15,417.84	-8,897.31	-4,185.17	-654.32	2,304.29	4,450.37	6,412.5	7,976.49
BP PLC	Methane Intensity (mt CO2e/BOE per ...)	.01	.01	.02	.02	.02	.03	.04	.05
BP PLC	Price Ratio								2
BP PLC	Price Adjusted Intensity (g CO2e/BOE)								31.56
BP PLC	Methane (mt)	8,388.61	10,485.76	13,107.2	16,384	20,480	25,600	32,000	40,000

Source: Bloomberg New Energy Finance

### Identifying baseline intensity and establishing baseline emissions

The tracker provides data across several key metrics related to oil and gas production and its associated emissions, including production (oil, gas, natural gas liquids, and total), absolute Scope 1 (CO<sub>2</sub> and CH<sub>4</sub>), Scope 2, CH<sub>4</sub> intensity per barrels of oil equivalent (BOE), and CO<sub>2</sub>e intensity per BOE. The CO<sub>2</sub> benefit of renewables and CCS are tracked separately, and also in a combined value “Net Scope 1 & 2 Intensity”.

Data points are sourced from company reports. Emissions and production data are captured from company reports dating back to 2016. Intensities are provided by dividing Scope 1 and 2 emissions by production, which is expressed in BOE. Baseline years within the range of historical data are determined by the reporting company and any restatement of baseline would result in updated forecasts.

### Projecting Scope 1 and 2

Projected intensities for upstream emissions are calculated based on reported targets, reported baselines, and consensus forecasts for oil and gas production (activity metric). Company decarbonization targets are sourced from company reports and are used, whether or not the company has a net-zero transition plan. Because the tracker is predicated on the assumption that companies are successful in achieving their CO<sub>2</sub> reduction targets, BI does not assess the credibility of companies’ plans in this tracker. For companies that do not provide a target, intensity forecasts are assigned a 1% annual improvement where consensus data exists. This improvement is based on the assumption that companies engage in routine maintenance of equipment, which leads to decreases in methane emissions.

Scope 1 and 2 data is calculated by multiplying the company’s emission intensity by its production. The forecasted emissions are based on company-stated decarbonization targets and on the assumption that companies are successful in achieving these targets.

As a result, other factors, including Low Carbon capex, are not assessed. The data is updated on an annual basis, and assumptions and forecasts would only change based on new guidance (baseline, reduction, etc.) from a company or changes in consensus data for oil and gas production.

Because the focus of the tracker is to highlight the nuances of upstream emissions, the tracker data does not include Scope 3 emissions, even though these emissions represent roughly 85% of total emissions for a typical oil and gas producer. Scope 3 can be calculated by applying CO<sub>2</sub> coefficients to oil and gas production and assuming products are combusted rather than used as inputs to petrochemical production. BI felt that inclusion of Scope 3 in the tracker would overshadow Scope 1 and 2 emissions, given the difference in scale, and this would obscure progress made through meaningful operational improvements. However, the tracker does capture the CO<sub>2</sub>e benefit and net benefit of renewables and CCS projects. By combining the projected CO<sub>2</sub> intensity with consensus data on production, a more complete view of future emissions emerges and reveals the fact that companies can achieve their stated targets by increasing production, rather than decreasing absolute emissions.

The tracker provides a unique data set that gives a view into whether — and how — a high-emitting industry is taking the steps necessary to decarbonize their upstream activities. It serves as a comprehensive data set and baseline for one of the most impactful industries and a dataset from which to determine EER on a forward looking basis. For example, if a financial

institution finances a project to reduce CO<sub>2</sub> emissions from a specific company, the financial institution can use the tracker to calculate the projected savings as compared to the baseline year. Further, if the emissions reduction efforts go beyond a company's current plans, the tracker can show the financial institution the difference between the actual CO<sub>2</sub> reductions and the forecasted emissions.

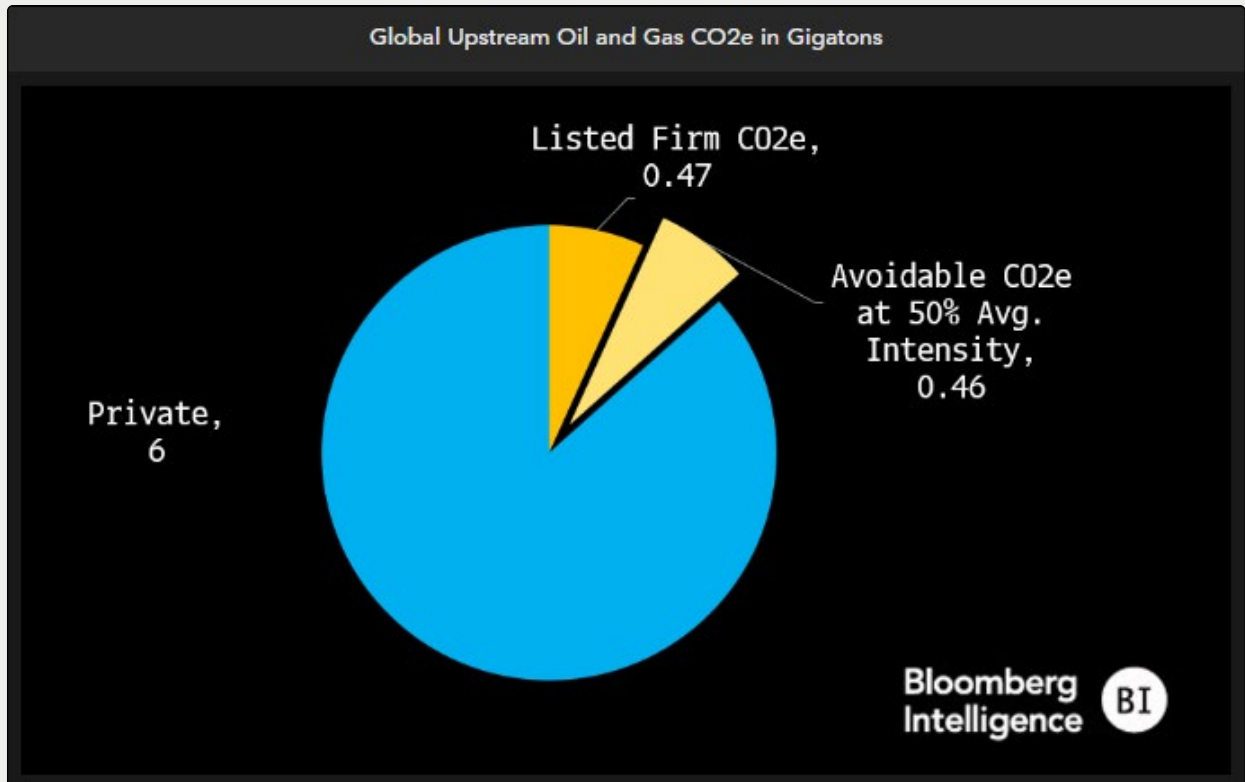
### **Use cases**

Based on consensus forecasts, nearly every company in the tracker will increase production in the near-term. Given this, companies may meet intensity targets, while underlying data indicates that absolute emissions are increasing. The tracker provides a comprehensive data set that allows the market to understand these dynamics, and to identify leaders and laggards. Further, it highlights the outsize impact methane emissions from select firms have on climate change and the unique opportunities for decarbonization.

For example, oil and gas companies generated 7 billion metric tons of CO<sub>2</sub>e in 2022, using a 20-year global warming potential, with 930 million metric tons (13%) being generated by publicly listed companies. If the most CO<sub>2</sub>e intensive group of publicly traded companies lowered emissions to 50% below the current average for listed companies, it would eliminate about 460 million tons of CO<sub>2</sub>e emissions, which is roughly 1.2% of today's global output. While private companies, which produce 55% of output and generate more CO<sub>2</sub>e than all ground transportation combined (6.1 Gt versus 6 Gt), present a huge challenge and opportunity.

**Figure 52: Global upstream oil and gas CO<sub>2</sub> in Gigatons**

This chart demonstrates the scale of CO<sub>2</sub> emissions from global oil and gas producers and the opportunity to reduce emissions by almost half a gigaton if publicly listed companies cut emissions intensity to 50% below the average for listed peers.



Source: Bloomberg Intelligence

### Limitations

The tracker provides a comprehensive dataset from which emissions baselines and forecasts can be determined. While comprehensive, the dataset does have limitations. For example:

- Its accuracy can be impacted by market activity, such as mergers and acquisitions.
- The dataset relies on companies having targets, and the availability of consensus data for production. If a company does not have a CO<sub>2</sub> reduction target, assumptions are used instead, and if consensus data is not available, a forecast is not generated.
- For companies that have set net-zero targets for 2030, assumptions are made that the shape of the decarbonization curve is smooth between base year and target.
- The tracker is based on company-reported data without the ability to test the accuracy of the data. It is worth noting that third party data sources, including the IEA and EPA, indicate that methane is typically underreported and the tracker attributes that discrepancy to private wells that fall under different reporting requirements.
- The quality of reporting varies by region.

## 21. JUST CLIMATE / GENERATION IM

**Sector:** Growth stage

**HQ Geography:** Offices in London and São Paulo

**Firm Overview:** Established by Generation Investment Management, Just Climate is a specialist investment business focused on scaling solutions for the highest-emitting, most off-track sectors of the economy. The challenge of achieving a net-zero world and addressing climate-related risk is huge, urgent, and needs tremendous mobilization of capital. Just Climate's mission is to establish climate-led investing as a capital allocation imperative for institutional investors globally.

Generation Investment Management is a founding member of the Net Zero Asset Managers initiative (NZAM).

### HYPOTHETICAL INDIAN WIND POWER DEVELOPER (THE DEVELOPER)

**Sector:** Renewables

**Company/asset/project geography:** India

**Company/asset/project description:** The company focuses on building and operating wind energy projects in India to support the country's energy transition.

**Type of transaction or nature of FI relationship:** Direct equity investment.

## Methodology

There is no globally accepted standard or methodology to measure forward-looking GHG emissions abatement.<sup>72</sup> Just Climate performs its assessment of GHG abatement using a methodology that builds upon generally accepted practices in traditional life-cycle assessments and carbon accounting (e.g., GHG Protocol Project Accounting Standard) but it adapts these principles and requirements to be fit for purpose in an investing context, as explained below.

Just Climate's Industrial Climate Solutions (ICS) strategy uses expected GHG emissions abatement generated by the solutions it invests in as the primary indicator to measure performance against the fund's sustainable investment objective. Expected GHG emissions abatement includes avoided GHG emissions and/or GHG emissions removed. Expected GHG emissions abatement is assessed from the date of the first investment

and covers a full 10-year period. Expected GHG emissions abatement is calculated as the baseline emissions, i.e., the emissions that would be expected to occur in the baseline scenario in the absence of the company or project occurring, net of the company or project's expected direct and indirect GHG emissions on a life-cycle basis (e.g., it includes diesel used for site construction and upstream transportation of raw materials) and any GHG emissions removal. Expected GHG emissions abatement is based on the underwritten base case business plan and is measured in millions of metric tonnes of carbon dioxide equivalent (MtCO<sub>2e</sub>).

The term baseline is not synonymous with business-as-usual (i.e., assuming that current levels of CO<sub>2e</sub> emissions will stay the same). Rather, the baseline should be defined based on analysis of current and projected performance benchmarks and expected trends for how GHG emissions will reduce over time anyway.

<sup>72</sup> Sometimes referred to as Scope 4 emissions.

The GHG Protocol for Project Accounting (Project Protocol) standard, which Just Climate's GHG emissions abatement methodology draws on heavily, describes additionality as a criterion that says GHG emissions avoidance should only be recognized for project activities that would not have "happened anyway". While there is general agreement that additionality is important, its meaning and application remain open to interpretation. The Project Protocol does not require a demonstration of additionality per se. Instead, additionality is incorporated as an implicit part of the procedures used to estimate baseline emissions, where its interpretation and stringency are subject to user discretion. In practice, interpretation and stringency are on a spectrum. At one end of the spectrum there is no demonstration of additionality; there is therefore a low likelihood that GHG emissions were in fact avoided compared to the baseline scenario, even if they are reported as such. At the other end of the spectrum, there is a high likelihood that emissions were avoided due to the implementation of the given solution. For example, in the case of carbon markets, historically, additionality has been seen as binary — either a credit is produced from the result of project activities that would not have otherwise happened and is therefore deemed additional, or it is not (and therefore not eligible to be a carbon credit). However, in recent years a more nuanced risk-based approach to additionality has emerged, understanding that there are multiple additionality tests, and some projects may have a higher probability of additionality than others.

Just Climate's definition of emissions abatement is consistent with the more stringent interpretation of the Project Protocol's requirement to incorporate additionality into the procedure used to estimate baseline emissions over time. Using this definition is important to determine (to the extent possible) whether a given solution is most likely to have an actual impact (i.e., bends the curve on global GHG emissions).

Disclosure of the key assumptions that underpin GHG emissions abatement, such as where the assessment boundary has been drawn, the baseline scenario, and areas of uncertainty, are critical to demonstrate the likelihood of impact.

Post-investment, for each year Just Climate holds an investment, the GHG emissions abatement model will be updated based on the actual performance of the functional unit driving the abatement (e.g., actual tonnes of green steel produced and sold). Just Climate annually reviews the GHG emissions abatement models for each portfolio company or project to determine whether any key assumptions have materially changed and therefore need to be updated. Any updates are done in partnership with a third-party consultant.

## A. Quantification

### Benchmark

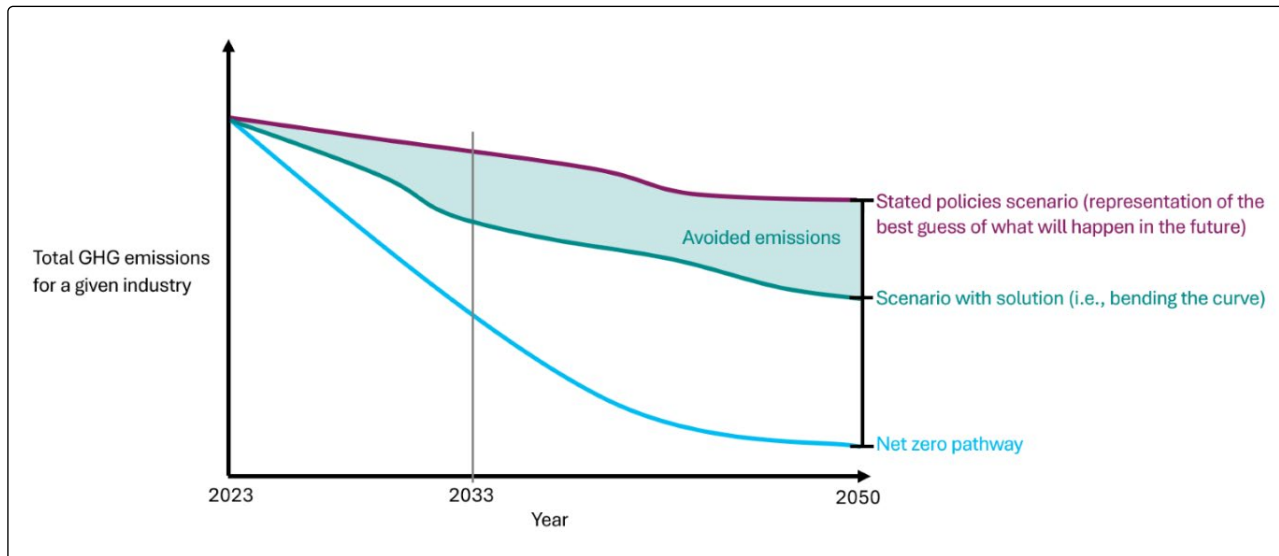
#### a. Identify the timeframe

The timeframe considered is 10 full years. Just Climate considers a 10-year time frame as its strategy to have a significant GHG emission impact in the near term, recognizing that GHG emissions abated today are worth more than in the future, based on the idea of the time value of carbon.

#### b. Define the baseline scenario

In the case of the Indian Wind Energy Developer (the Developer), they are installing wind energy projects that expand access to renewable energy in India, decarbonizing the electrical grid. As the Developer connects to the grid where it is operating, the baseline should be grid electricity. The baseline will be dynamic, meaning Just Climate expects it to change over time as the Indian grid decarbonizes. The speed of this decarbonization is based on a credible assessment of future decarbonization, based on input from sources like the International Energy Agency's India Energy Outlook report.

**Figure 53: Defining the baseline scenario**



Source: Just Climate analysis

In practice, Just Climate cannot always easily differentiate between what is in the baseline scenario and a given climate solution — this is particularly the case for existing technologies like solar and wind, heat pumps, and EVs. For new and innovative technologies it is easier to evidence that they are not part of a baseline, as the technology did not exist in the forecast. The IEA’s stated policy scenario forecasts 210 gigawatts of solar capacity to come online between 2020 and 2030 (straight-line 21 gigawatts per year). If Just Climate invests in a solar developer, it does not know if the solar developer’s 500MW of solar installations in a

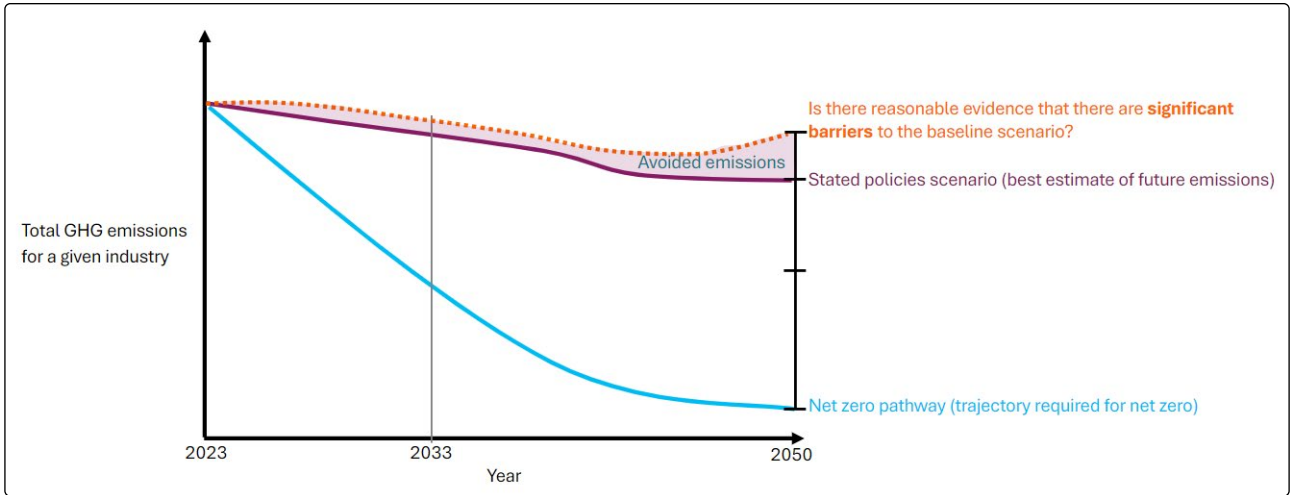
given year is included or excluded from the IEA’s projections. In other words, is that 500 MW of solar that a developer adds to the grid additional to what IEA’s baseline prediction was? Perhaps 250 MW is additional? In the absence of this quantitative understanding, Just Climate looks for evidence regarding the barriers a climate solution can address to accelerate decarbonization faster than the baseline scenario.<sup>73</sup>

In some contexts, there might be an argument for additionality because the baseline has significant barriers or risks of materializing.

<sup>73</sup> Please refer to Example 11 in: GFANZ Secretariat. [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023, p. 62, for a discussion on how Just Climate considers different types of barriers in support of the assessment.



**Figure 54: Defining the baseline scenario continued**

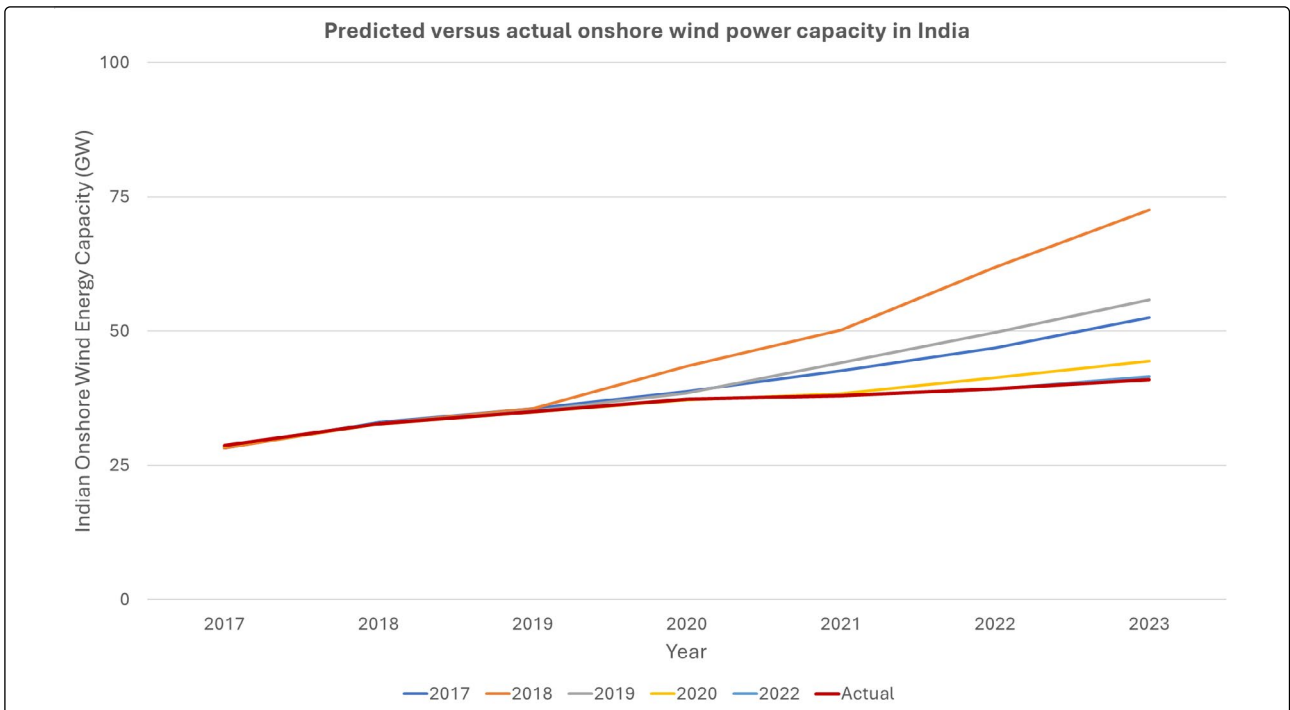


Source: Just Climate analysis

In the case of India, Just Climate was able to get quantitative evidence from a third-party analyst that there has been consistent overestimation of the rollout of onshore wind from 2017 to 2022 compared to the actual rollout. This highlights that there have been significant barriers to achieving renewable power expansion in India. Just Climate's thesis is

that, by addressing a significant barrier to achieving renewable power expansion in India (in this case the availability of sufficient capital to fund projects), there is reasonable likelihood that scaling the solution will result in the deployment of renewables faster than what would have otherwise occurred and therefore generates actual avoidance of GHG emissions.

**Figure 55: Predicted versus actual onshore wind power capacity in India, 2017 to 2023**



Source: Just Climate analysis

It is important to be clear why a solution is additional to the selected baseline. In this case, Just Climate’s capital as an investor addresses significant barriers to renewable energy

deployment in India. Other barriers could result in additionality are illustrated in Figure 56. In the case of this Developer, the material barrier, and therefore driver, of additionality is financial.

**Figure 56: Assessment of significant barriers to renewable energy deployment in India**

BARRIER TYPES	BARRIER QUESTIONS TO SUPPORT JUST CLIMATE’S ASSESSMENT OF ADDITIONALITY	RAG	ASSESSMENT EX ANTE
<b>Financial and budgetary</b>	Are high costs preventing or slowing down roll out? Is there limited or no access to capital for this climate solution in a given region? Are there high perceived risks, resulting in high borrowing costs or lack of access to credit or capital?	●	Historically, foreign direct investment (FDI) into Indian renewable power projects has been slow. In 2023, total investment in renewable energy projects was US\$ 9 billion, with FDI accounting for 33%. <sup>74</sup> For India to successfully roll out renewable power per the baseline forecast, FDI must flow into the country in larger volumes. Just Climate’s investment can help increase FDI and facilitate the inflow of foreign capital to address the build-out of renewable power in India.
<b>Technology</b>	Is a sector lacking the needed technology to decarbonize? (either a new technology that displaces a higher GHG one or a significant improvement on an existing technology (e.g., efficiencies))	●	Wind turbines are an established technology that is highly replicable and scalable. In India, wind power displaces higher GHG power generation methods (such as coal), therefore this is not a barrier for additionality.
<b>Institutional/social/cultural/political/consumer behavior</b>	Is there institutional or political opposition to the implementation of the technology or practice in question? Is there supportive or prohibitive regulation in place? Is there limited or no institutional capacity required to facilitate the technology or practice in question? Are there any consumer behaviors-related barriers to accelerating decarbonization?	●	The Indian regulatory environment is very supportive of renewable energy development; the degree of this support is dependent on the state but there are very high national roll-out targets. These targets are supplemented by various incentives to create a local supply chain for key inputs in renewable technologies. Therefore, it is not considered a barrier for additionality.

74 [Business Standard](#).

## Projection

### a. Assess baseline life-cycle emissions

The Indian grid emissions factor was 0.72 tCO<sub>2</sub>e/MWh in 2023.<sup>75</sup> Just Climate assesses climate solutions over a 10-year horizon, so the baseline must reflect realistic expected trends over this period. In this specific case, that means Just Climate must build a view on how it believes the Indian grid will decarbonize over that time period. Using the 2023 CEA Indian grid emissions factor as year 1 and applying an appropriate IEA decarbonization rate, the year 10 emissions factor will be 0.51 tCO<sub>2</sub>e/MWh.

These assumptions will be checked on an annual basis, where possible, against the actual grid emissions factor in the region. Just Climate has been conservative with its assumptions in the sense that they likely overestimate the speed at which the baseline grid emissions factor will reduce.

### b. Assess solution life-cycle emissions

As Just Climate addresses the entire life cycle of the baseline, it must also include the entire life-cycle emissions of wind power compared to the embodied GHG emissions of the energy that would have been provided in the absence of the Developer. The life-cycle emissions of wind power is not zero; it is estimated to be 0.01 tCO<sub>2</sub>e/MWh.<sup>76</sup> Just Climate compared this value to the life-cycle embodied GHG emissions of coal and noted that wind actually has higher embodied GHG emissions on a per MWh basis, but was determined not material for the purposes of whether to proceed with this investment.

## Calculation

### a. Assess potential EER

The functional unit is MWh and the projected MW installations and capacity factor drive this. Just Climate’s MW installation forecast is based on an underwritten business case from the Just Climate team (for this paper, it used illustrative numbers).<sup>77</sup> All numbers in this table are based on a hypothetical company and are based on Just Climate’s own analysis.

**Figure 57: EER potential (tCO<sub>2</sub>e/MWh) of the Developer**

Metric	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Grid emissions factor (tCO <sub>2</sub> e/MWh)	0.72	0.70	0.67	0.65	0.62	0.60	0.58	0.55	0.53	0.51
Wind emissions factor (tCO <sub>2</sub> e/MWh)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Unit impact wind (tCO <sub>2</sub> e/MWh)	0.71	0.68	0.66	0.64	0.61	0.59	0.56	0.54	0.52	0.49
MW wind new installations	150	263	420	622	860	1,125	1,401	1,676	1,940	2,184
Total MW capacity wind (including half year convention)	75	281	623	1,143	1,884	2,877	4,139	5,678	7,486	9,548
Wind capacity factor	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
MWh wind	131,400	492,750	1,090,620	2,003,062	3,301,201	5,039,948	7,252,312	9,948,066	13,116,082	16,728,922
GHG abatement wind (tCO <sub>2</sub> e)	93,031	337,121	720,165	1,274,926	2,022,486	2,967,594	4,097,392	5,383,299	6,784,990	8,255,154
<b>Total cumulative GHG abatement (MtCO<sub>2</sub>e)</b>	<b>0.09</b>	<b>0.43</b>	<b>1.15</b>	<b>2.43</b>	<b>4.45</b>	<b>7.42</b>	<b>11.51</b>	<b>16.90</b>	<b>23.68</b>	<b>31.94</b>

75 Government of India, Ministry of Power, Central Electricity Authority. [CO<sub>2</sub> Baseline Database for the Indian Power Sector. User Guide](#), Dec. 2023.

76 NREL. [Life Cycle Emissions Factors for Electricity Generation Technologies](#).

77 Just Climate analysis.

## Allocation

As long as the project under evaluation is considered a meaningful component to delivering climate impact, Just Climate allocates the entirety of the avoided emissions to the project. For the Developer, its contribution of developing and operating wind turbines is a very meaningful component of the value chain that is delivering GHG emissions abatement. Unlike financial institutions calculating financed GHG emissions, Just Climate does not claim any share of the underlying GHG emissions abatement of its portfolio companies. Just Climate's rationale for such treatment is that there are many actors that ultimately enable the GHG mitigation of a given company (i.e., climate impact). Ownership of a company and the provision of capital, while an important part of what enables the impact, does not necessarily capture all of the actors in a value chain that ultimately enable the climate impact to occur. For example, the wind turbine manufacturer does not own any equity of the Developer. To this end, Just Climate also reports the total GHG abatement rather than equity weighting the figures to its equity share of the portfolio company.

## Use cases

Just Climate is a climate-led investment business focused on scaling solutions for the highest emitting, most off-track sectors (such as steel and cement globally, or renewable energy generation in India). Its climate impact quality assessment, which includes the GHG emissions abatement metric, allows it to identify the Climate Solutions with potential for highest positive climate impact. While potential for GHG emissions abatement is the starting point of Just Climate's research process, the manager only invests in those solutions that can also generate attractive risk-adjusted financial returns for its investors.<sup>78</sup> Just Climate has also 100% aligned its compensation to this metric;

it shares in the profit it creates for its clients (consistent with traditional carried interest), but its portion of profit share can reduce to the extent that it does not also deliver a portfolio-weighted average GHG emissions abatement target.

## Other discussion

### Integrated team

Just Climate has an integrated team, meaning that the investment team shares responsibility for the climate impact assessment; there are no silos or separate impact reports. The team has specialist climate finance professionals, but their skills are woven into the origination, diligence, and portfolio management processes. This approach is vital to understanding the interplay of commercial and impact features and ensuring that the investment team identifies and manages assets to deliver attractive risk-adjusted financial returns through highest climate impact.

### Data quality and documentation

Activity projections and emissions factors must be based on high-quality data that are specific and relevant to the solution. Primary data sources are preferred where possible, followed by secondary sources. Modeled and/or estimated data should be used only if primary and secondary sources are unavailable or their use is not feasible. All data sources must be documented, with justification provided where appropriate.

### Uncertainty

The forward-looking nature of avoided emissions estimations is expected to introduce inherent uncertainty into the evaluation process. Where key assumptions are made regarding baseline conditions, project performance, and/or system

<sup>78</sup> Although Just Climate seeks to deliver the highest climate impact and attractive market returns, this is an aspiration and there is no guarantee this goal will be achieved.

effects that materially affect the evaluation's outcome, the level of uncertainty in these assumptions should be qualitatively described. High-uncertainty assumptions shall be flagged as potential triggers for review during periodic re-evaluations.

### Re-evaluations

Changing conditions or evolving understanding may require that a full solution reassessment is conducted in order to ensure the project's expected GHG abatement is not materially misstated. A reassessment includes re-evaluation of project assumptions, calculations, and projections to re-calculate project and/or removed emissions, beyond the simple updates completed during the annual review cycle. Certain qualitative or quantitative triggers might warrant a reassessment; project-specific reassessment triggers should be defined during the initial evaluation and monitored by Just Climate.

Example project reassessment triggers include:

- **Underlying assumptions do not reflect reality:** Better information on the project results in increased understanding of the actual business plan, or the baseline forecast needs revision due to either faster or slower decarbonization than originally projected.
- **Additionality:** Evidence comes to light that the given climate solution is no longer additional (or partially additional) compared to the baseline.
- **Performance:** Project performs differently than assumed, either in the speed of project roll out or the capacity factor (more or less sunshine or faster or slower wind).
- **Significant updates in scientific understanding, reference methodologies, or data sources.**
- **Force Majeure Events:** Unexpected, extraordinary circumstances affecting the project scenario or assumptions.

### Limitations

Limitations to the accuracy and completeness of the GHG calculations are inevitable. While to some extent these are unavoidable, the evaluation approach should seek to minimize the effect of the limitations. Where additional limitations exist beyond those expected, these should be documented, described, and flagged as potential triggers for re-assessment where they present substantial risk of being incorrect. Expected limitations include:

- Lack of Indian state-specific rates of decarbonization for the baseline (decarbonization rate applied using national average)
- Difficulty in forecasting project growth and/or baseline trends
- Restriction of the evaluation timeline to 10 years; it is anticipated that additional impacts may occur beyond the timeframe that are not accounted for in this methodology
- Quantitative link between additionality of this Climate Solution vis-a-vis the baseline scenario, assessment of barriers used as a proxy

## 22. SCHRODERS

**Sector:** Asset Management

**HQ Geography:** Global (United Kingdom headquarters)

**Firm Overview:** Schroders is a global investment manager and leading provider of active asset management, advisory, and wealth management services, with GBP 773.7 billion in assets under management (AUM), as at end of June 2024. It was a founding member of the Net Zero Asset Managers Initiative (NZAMI). As part of its NZAMI commitment, it set targets validated by the Science Based Targets Initiative (SBTi) to align its financed emissions across its portfolio companies' Scope 1, 2 and 3 GHG emissions to 1.5 degrees C by 2040 across 100% of its investments. More information on its involvement with climate initiatives can be found in its latest [Climate Report 2023](#).

### OWENS CORNING

**Company description:** Owens Corning is a Fortune 500 US-listed producer of building insulation materials and fiberglass composites.

**Company/asset/project sector:** Industrials

**Company/asset/project geography:** US

**Type of transaction or nature of FI relationship:** Schroders holds both equity and credit investments in Owens Corning; however, Schroders does not include its equity shareholdings when allocating company avoided emissions. Please see the Allocation section below for more information.

## Methodology overview

The race to net zero is on and is turning decarbonization into a dominant investment theme for the coming decades. The transition will create winners and losers, meaning that investors will need a robust framework to identify risks and opportunities. Conventional carbon footprint analysis focuses on the emissions that companies generate from their own operations and value chains, which are key sources of exposure to carbon risks. But the leaders in the decarbonization race are doing more than reducing their own emissions; they are developing products and services that drive meaningful reductions across the economy, the benefits of which are not captured in conventional metrics. Schroders' Avoided Emissions Framework provides an additional lens through which to assess companies and identify climate solution providers.

Schroders developed its proprietary Avoided Emissions Framework several years ago and

published a report in collaboration with Singapore's sovereign wealth fund GIC in 2021 detailing the approach. The Avoided Emissions Framework was built for application to investment analysis and it is integrated into one of Schroder's flagship sustainability models — SustainEx™ — which estimates the positive and negative externalities that companies may create for society or the environment. By understanding the externality profile of a company, Schroders can achieve a nuanced, objective, and comprehensive view of the issuers' sustainability risk profile and its impact across stakeholders.

Schroders' Avoided Emissions Framework is based on systematic analysis, with an emphasis on investment relevance, objective analysis, and scalability across a wide range of global companies. It starts by identifying the key sources of manmade GHG emissions, where the opportunities for alternative technologies to contribute to global emission reductions are typically greatest, such

as electricity generation and transport. It then identifies activities in these sectors that either displace an existing, more carbon-intensive technology (such as solar displacing gas power) or change behavior to reduce carbon-intensive activities (such as the increasing usage of videoconferencing, which indirectly mitigates aviation emissions by reducing the need for some in-person business meetings and business travel).

Drawing on academic and industry literature, Schroders estimates the lifecycle emissions of each carbon-avoiding activity per unit of output (relative to a baseline where that activity had not taken place at all), or it estimates the lifecycle emissions based on an alternative (higher carbon) technology that might otherwise have been used. It then attributes the avoided emissions to relevant value chain stages based on an industry’s share of economic value-add.

Finally, Schroders maps each activity to standardized business segments, in order to attribute avoided emissions to individual companies based on their exposure to business segments associated with those activities. Its framework

predominantly uses FactSet data that maps the revenues of over 49,000 public companies to around 7,000 discrete market segments, allowing it to cover a broad investment universe.

The framework currently identifies 19 carbon-avoiding activities that meet the criteria necessary to fall under one of the carbon-avoiding activities, as listed in its [public methodology document](#), which maps to over 900 public companies.

### Assessment and quantification of avoided emissions

Schroders uses Owens Corning, a real-economy company, to demonstrate its methodology for assessing avoided emissions. As noted, the company is a leading producer of building insulation materials. As such, Schroders attributed to it an avoided emissions benefit for Solid Wall Building Insulation, one of the 19 activities captured by its framework. Figure 58 provides a summary of the company-specific calculation of Avoided Emissions for Owens Corning using Schroder’s Avoided Emissions Framework.

**Figure 58: Illustration of the 5-step approach to calculate avoided emissions for Owens Corning**

Step 1	Step 2	Step 3	Step 4	Step 5		
Identify carbon-avoiding activities	Estimate avoided emissions achieved by these carbon-avoiding activities relative to alternatives	Attribute avoided emissions to industries across the value chain	Quantify avoided emissions intensity for each industry	Map industries to revenue segment	Estimate each company’s revenues from carbon-avoiding activities	Derive avoided emissions intensity at company level
Building insulation	52 tCO2e per installation of solid wall building insulation	Primary sector - insulation manufacturer (50%): 26 tCO2e	Estimated installation cost of \$14,000: 26tCO2e/14,000* 1,000,000 = 1,857 tCO2e/\$mn	Industrial and Materials ↓ Insulation	Owens Corning’s revenue breakdown: 37.9% from Insulation	0.379 *1,857 = <b>704 tCO2e/\$mn</b>

Source: Schroders, GIC. Data as of August 2024. For illustrative purposes only

## Setting the Benchmark

### 1. Identify the timeframe

Schroders attributes avoided emissions to companies based on their involvement in — or production of — carbon-avoiding products and activities in the latest reporting year, as reflected by annual sales (revenues or actual output, e.g., GWh). In the example of Owens Corning, Schroders estimates the company's avoided emissions across the total lifecycle of its insulation materials (i.e., 20 years) based on the total volume of sales in the latest reporting year (i.e., 2023), instead of attributing the avoided emissions across each year of the 20-year lifecycle period.

Schroders does not include forward-looking projections of avoided emissions (i.e., based on projected company earnings, technology development, policy levers, market-mediated effects) because this relies on a large number of assumptions and introduces greater uncertainty. As a result, all company calculations are based on present-day data and assumptions to ensure a more conservative and transparent approach.

### 2. Define the baseline scenario

For each of the 19 activities assessed under the framework, Schroders estimates the avoided emissions by comparing the lifecycle emissions of the low-carbon product or activity relative to one of two baselines:

1. **Net:** emissions from the most likely alternative product or activity (e.g., solar versus gas energy); or
2. **Gross:** emissions if the carbon-avoiding activity had not taken place at all (e.g., use of solid wall building insulation versus not using solid wall building insulation). Schroders uses this baseline in cases where the most likely alternative is that no equivalent product or activity exists or is used.

In the context of Owens Corning, Schroders used the second baseline (emissions if the carbon-avoiding activity had not taken place at all, i.e., no use of solid wall building insulation).

## Avoided emissions projection — Step 2

### 1. Assess baseline life-cycle emissions

In the case of Owens Corning, the baseline scenario assumes that no solid wall building insulation is used, therefore the avoided emissions Schroders calculated for the company is taken as gross savings.

### 2. Assess solution life-cycle emissions

To estimate the lifecycle emissions of the carbon-avoiding activity, Schroders draws on existing findings in academic and industry literature, such as the IPCC Emission Factor Database. In this example, for solid wall building insulation, Schroders used lifecycle assessment data from the Energy Savings Trust and Climate Change Committee. As a result, it estimated that each tonne of solid wall building insulation results in annual emissions savings of 2.6 tCO<sub>2e</sub> compared to an uninsulated building. Assuming an average useful life of 20 years, this equates to 52 tCO<sub>2e</sub> of avoided emissions over the lifetime of a single installation.

## Calculation: assess potential EER — Steps 3, 4 and 5

For each activity, Schroders attributes the avoided emissions to the industries across the value chain. The value chain approach allows it to capture the contribution of a broad set of industries to emissions reductions while minimizing the risk of double counting. In some cases, Schroders recognizes that measuring the share of value-add to different actors in the value chain is challenging and imprecise. As a result, it has developed default values to gauge typical exposures and value chain attribution shares, around which it makes adjustments where the data



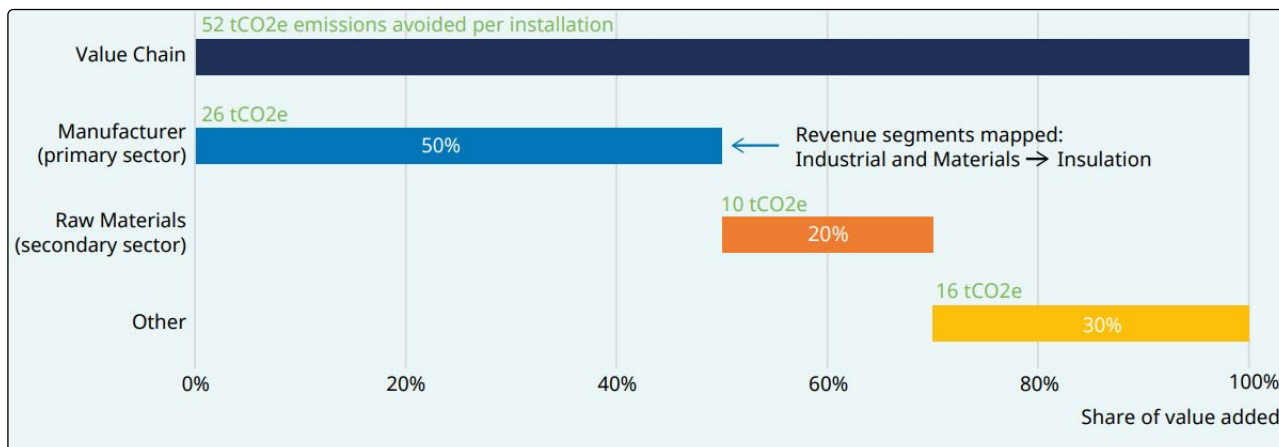
and evidence indicate it is appropriate to do so. The attribution values are as follows:

- **Primary industry:** 50% — primary industries include the producers or manufacturers of a technology (such as the vehicle manufacturer for EVs) or the providers of a service (such as the operator for bus travel, substituting private transport).<sup>79</sup>
- **Secondary industry:** 20% to 30% (exact percentages depend on estimates for the share of costs) — these typically include the producers of key parts for a technology (such as auto parts for EVs) or the key equipment used to provide a service (such as the bus manufacturer for bus travel). If there are no clear secondary industries, Schroders would attribute this part of the value-add back to the primary industry.

- **Tertiary industry:** 10% — these typically include producers of raw material components, such as batteries and associated metals for EVs. In some cases, Schroders may not identify any tertiary industry (such as in the case of bus travel) if this is deemed to be insignificant.
- **Others:** any remaining share of the economic value-add for “other” unspecified contributions to the value chain, such as the provision of financing or raw materials that go into making component parts.

For building insulation, Schroders considers the primary industry of the value chain to be insulation manufacturers so the avoided emissions are estimated to be 26 tCO<sub>2e</sub> per tonne of insulation (50% x 52 tCO<sub>2e</sub>).

**Figure 59: Industry value chain attribution for building insulation**



Source: Schroders, GIC. Data as of August 2024. For illustrative purposes only.

<sup>79</sup> The 50% is based on NYU Stern data (January 2021) showing gross margins (a proxy for economic value add) averaging 37% across 7,582 US companies. Schroders then adds back the value from direct labor costs into gross margins so that effectively employing companies receive the avoided emissions benefits from labor share of the value add, assuming direct labor on average contributes to around 10-20%.

Schroders then quantifies the activity's avoided emissions intensity (tCO<sub>2</sub>e/US\$ million) by multiplying the avoided emissions per functional unit – in this instance, one tonne of insulation – by the average cost of each functional unit. In this example, Schroders estimates the cost of each tonne of solid wall building insulation to be US\$ 14,000. It then scaled this to calculate the avoided emissions per million dollars, which equates to 1,857 tCO<sub>2</sub>e/US\$ million sales for this example of solid wall building insulation:

$$\frac{\text{US\$ 1,000,000}}{\text{US\$ 14,000}} \times 26 \text{ tCO}_2\text{e / tonne} = 1,857 \text{ tCO}_2\text{e / US\$ million sales}$$

To calculate companies' absolute avoided emissions (tCO<sub>2</sub>e), Schroders multiplies the avoided emissions intensity for the relevant activity to the company's segment sales in the latest reporting year, as identified via FactSet segments. For Owens Corning, FactSet identifies US\$ 3,668 million revenues from insulation products:

$$\text{US\$ 3,668 million} \times 1,857 \text{ tCO}_2\text{e / US\$ million sales} = 6,811,476 \text{ tCO}_2\text{e absolute avoided emissions}$$

For some of the 19 carbon-avoiding activities in its framework, instead of revenues, Schroders applies the avoided emissions to companies' actual unit of output (e.g., GWh for renewable power generation).

Schroders also uses the company's share of revenue from the relevant carbon-avoiding activity to estimate the company-specific avoided emissions intensity. For example, FactSet indicates that Owens Corning has 37.9% of revenues from insulation manufacturing and the remaining revenues from segments that are not mapped to other carbon-avoiding activities in its framework. Weighting this exposure, Schroders estimates the overall company-level avoided emissions intensity:

$$37.9\% \times 1,857 \text{ tCO}_2\text{e / US\$ million sales} = 704 \text{ tCO}_2\text{e / US\$ million sales}$$

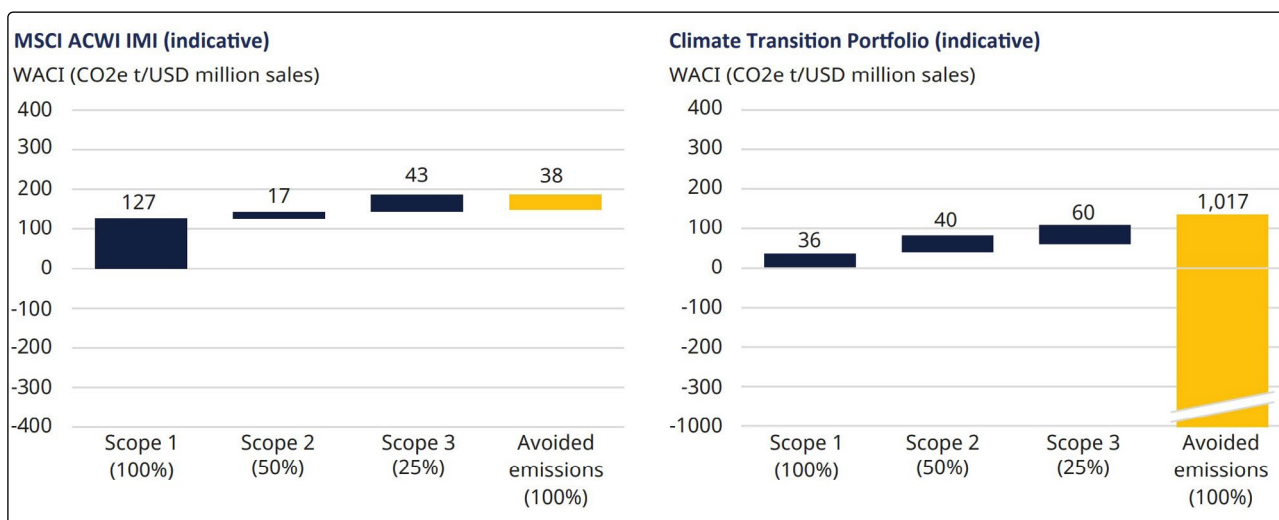
Finally, Schroders can assess how the company's weighted average carbon intensity (WACI) across Scopes 1, 2 and 3 compares to its avoided emissions intensity. In this case, the avoided emissions intensity for Owens Corning is higher than the company's emissions intensity across Scopes 1, 2 and 3 combined, which tells Schroders about the company's contribution to decarbonization and the opportunity that this investment would offer to an investor seeking companies that are accelerating the climate transition, even if they operate in typically high-emitting sectors.

## Allocation of EER to the portfolio

Schroders primarily uses the avoided emissions analysis to compare the scale of those avoided emissions to the weighted average carbon intensity across Scopes 1, 2 and 3 for the companies and portfolios being assessed. This enables comparison of exposure to companies that contribute toward the climate transition and a consolidated and holistic view at a portfolio level. This also helps institutional investors that wish to allocate capital toward opportunities arising from the net-zero transition.

To demonstrate the benefits of Schroders' framework in providing an integrated portfolio view of carbon exposures, it compared the adjusted weighted average carbon intensity (WACI) across Scopes 1, 2 and 3 and avoided emissions for two representative portfolios. The first is the MSCI ACWI IMI, representing the broad investable listed stock universe. The second is a hypothetical "Climate Transition" Portfolio, consisting of companies best positioned to accelerate the transition to a low-carbon economy in sectors such as renewable power and energy storage, and assigning equal weight to each company.

**Figure 60: Adjusted WACI by emissions scope for MSCI ACWI IMI versus Climate Transition Portfolio<sup>80</sup>**



Source: Schroders, GIC, using MSCI carbon emission estimates. For illustrative purposes only

The adjusted WACI for avoided emissions for companies in the MSCI ACWI IMI (left chart) is relatively modest, at just over a quarter of their Scope 1 WACI. In contrast, in the Climate Transition Portfolio (right chart) the WACI for avoided emissions is more than seven times the WACI for Scopes 1, 2 and 3 emissions. The companies included in this portfolio were specifically chosen

because their products and services are designed to accelerate the transition to a low carbon economy. Avoided emissions analysis provides an additional lens to ensure those benefits are captured in portfolio analysis and so that the companies providing solutions to the climate challenge are recognized and rewarded in capital allocation decisions.

<sup>80</sup> Schroders adjusts Scopes 2 and 3 downward by 50% and 75% respectively, as companies do not have the same level of control over these scopes and are less likely to be impacted financially by regulators' efforts for these emissions. Scope 1 and avoided emissions are unadjusted.

## Use cases

### Recognizing decarbonization impact beyond Scopes 1, 2, and 3

Avoided emissions is one of the categories in Schroders' proprietary tool, SustainEx™. The metric attempts to capture the societal benefits of companies that enable system- or economy-wide reductions in carbon emissions. The actual emission reductions can take place within the scope of other companies, other economic actors (households, public sector entities), or within the companies' own scope of operations. The primary focus is on capturing emissions savings that are not otherwise accounted for within Scope 1, 2 and 3 accounting, though in some cases overlaps are accepted if the overall result in terms of reducing biases and balancing positive and negative externalities is achieved, in line with guidance published by WRI.<sup>81</sup>

Avoided emissions benefits incorporate a desired element of carbon price sensitivity to low-carbon companies — without an avoided emissions benefit, the score for a zero-emission company would be merely constant in the case of carbon price increases, whereas from an investment perspective its merits actually increase.

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### Identify companies that represent investment opportunities in the transition

Scope 1, 2 and 3 emissions mainly capture companies' exposure to transition risk, rather than opportunity. Schroders' framework complements this assessment by capturing the potential avoided emissions generated by companies and quantifying it in a metric that is directly comparable to these conventional emissions measures (tonnes of emissions relative to sales). The framework therefore enables the analysis of risks and opportunities under a common unit of measurement, allowing a more integrated and holistic approach to build a portfolio that can both take advantage of — and avoid risks from — the low carbon transition.

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81 World Resources Institute. [Estimating and Reporting the Comparative Emissions Impacts of Products](#).

## 23. SOCIETE GENERALE

**Sector:** Financial Services

**HQ Geography:** Global (France headquarters)

**Firm Overview:** Societe Generale (The Group) is a top tier European Bank with more than 126,000 employees serving about 25 million clients in 65 countries across the world.

The bank runs three complementary sets of businesses, embedding ESG offerings for all its clients:

- French retail, private banking and insurance, with retail bank SG and insurance franchise, private banking services, and the digital bank BoursoBank.
- Global banking and investor solutions, offering tailor-made solutions in equity derivatives, structured finance and ESG.
- International retail, mobility, and leasing services, comprising well-established banks in Czechia, Romania, and several African countries; Ayvens (the new ALD | LeasePlan brand), a global player in sustainable mobility and specialized financing activities.

The Group is included in the principal socially responsible investment indices: DJSI (Europe), FTSE4Good (Global and Europe), Bloomberg Gender-Equality Index, Refinitiv Diversity and Inclusion Index, Euronext Vigeo (Europe and Eurozone), STOXX Global ESG Leaders indexes, and the MSCI Low Carbon Leaders Index (World and Europe).

In 2021, Societe Generale joined the Net-Zero Banking Alliance (NZBA) as a founding member. The Group also joined several working groups of financial institutions and major industries to work collectively on climate-aligned finance frameworks, including:

- The Poseidon Principles (2019);
- The Sustainable Steel Principles (2022);
- The Sustainable Aluminum Finance Framework (2023);
- The Pegasus Guidelines for the aviation sector (2024).

These frameworks are designed to help banks independently measure and disclose the emissions intensity and/or climate alignment of their lending portfolios compared to a 1.5 degrees C scenario.

### H2 GREEN STEEL (H2GS) PROJECT

**Sector:** Steel

**Company/asset/project geography:** Sweden

**Company/asset/project description:** H2GS, as an entity, was formed in 2020 with the aim of constructing the first large-scale steel production facility with a fossil fuel-free manufacturing process. The facility will be constructed in Boden, northern Sweden. It is expected to produce 5 Mt per annum of green steel by 2030 and to abate 95% of the CO<sub>2</sub> emissions associated with traditional blast furnace steel production. Primarily, the steel produced will supply the European automotive industry but it will also supply a range of other consumers that are interested in decarbonized steel.

**Type of transaction or nature of FI relationship:** Project financing: the purpose is to finance the H2GS project, including an electrolyzer, a direct reduction (DR) plant, steel plant, and associated facilities.

This case study presents an estimation of the expected emissions reductions for the H2 Green Steel (H2GS) project. Societe Generale acted as lead advisor on the senior and junior debt facilities, senior mandated lead arranger (SMLA), and lender to H2GS in 2023. By replacing coal with green hydrogen (H2) powered by renewable electricity, the project aims to significantly abate carbon emissions compared to the traditional blast-furnace steelmaking process.

## Methodology

### Identify the timeframe and define the business-as-usual (BAU) scenario

The lifetime of the project — 20 years — is used as the assumed benchmark timeframe.

For the BAU scenario, the technology used as a reference is a well-performing blast furnace-based process located in Europe, where most efficiency measures have already been taken. The efficiency measures include the partial replacement of coke with pulverized coal injection (PCI) and the partial replacement of sinter with blast furnace pellets. Furthermore, the amount of scrap making up the total metallic charge in the blast furnace is close to technical limits. Because this technology is close to current efficiency limits, no reduction in emissions over time is expected from this technology in the abatement analysis.

### Underlying assumptions of projection calculations

All the information used to calculate the EER was taken from a greenhouse gas analysis carried out by H2GS.

Since the project is not yet operational, no measurable activity data is available and results remain preliminary. Emission factors were therefore

sourced primarily from renowned emission factor databases for both the project and reference scenarios. Where possible, supplier-specific emission factors were used in the project scenario (e.g., for raw materials and logistics). Direct emissions and activity data from steel production were based on information provided by the equipment suppliers.

Once the project is operational, it will be subject to a detailed emissions monitoring plan and secondary data (i.e., data from public sources or specialized databases) will be replaced by measurable, primary data. The calculation of the solution's life-cycle emissions will be updated accordingly and the accuracy of the EER calculation will improve. In particular, emissions from production are expected to be measured on a continuous basis through H2GS's digital factory, which will be able to capture data points throughout the production process of green hydrogen (which will be used to reduce the iron ore instead of coal in the BAU scenario), green iron, and green steel.

Compared to a Blast Furnace-Basic Oxygen Furnace (BF-BOF), the solution is expected to reduce plant-wide annual emissions by 95%. Over its 20-year lifespan, and based on an expected production volume of 5 Mt per annum of green steel by 2030, the project is expected to reduce around 180 MtCO<sub>2</sub> compared to a BF-BOF.<sup>82</sup>

### Scope considerations

As the upstream emissions from steel manufacturing facilities vary depending on site layout, technology, and specific logistics flows, the analysis of the project's abatement potential focused on Scopes 1 and 2; a conservative approach was taken for upstream Scope 3 emissions. More specifically, it was assumed that the plant layout included a coke plant and a sinter plant (which were therefore accounted for under

<sup>82</sup> Note: These figures are sensitive to specific methodology, scope considerations, and data inputs.

Scopes 1 and 2 and not Scope 3). The remaining upstream Scope 3 emissions primarily included transportation and production of input materials needed by the process. These emissions were consistently estimated conservatively to avoid overly optimistic figures.

In summary, the preliminary assessment of the project's GHG emissions was based on a cradle-to-gate approach (i.e., emissions from raw materials extraction to the factory "gate"), as this type of analysis is most often requested by lenders, investors, and customers. Also, for steel, the cradle-to-gate approach captures the most material emissions sources of the product life cycle. Such an approach differs from cradle-to-grave assessments that cover the full product life cycle, including the product use phase and the end of life.

### Concluding remarks

Societe Generale is not using an EER methodology today to calculate forward-looking emissions perspectives and it does not use the EER of this project as a key performance indicator. The case study presented for the H2GS Project is an opportunity to build capacity on this topic and to understand the underlying methodology. Existing data limitations and a lack of consensus on the EER framework are currently preventing Societe Generale from implementing an approach at portfolio level. For example, one important technical barrier is that the approach used by H2GS to estimate EER from the project is applicable to only specific assets (when data is available). In the H2GS case, the calculation of 95% abatement of

CO<sub>2</sub> emissions, as compared with traditional blast furnace steel production, was made by the client. For such calculations to be made at portfolio level, it would require complex methodological considerations and access to very granular data for all assets financed by Societe Generale.

Nevertheless, traditional metrics such as financed emissions cannot, alone, accurately capture transition finance needs and progress and contributions made by banks toward the transition. As such, forward-looking metrics, such as EER, are interesting complementary metrics to consider in the future to allow Societe Generale to measure the potential impact of its financing.

Several enhancements in the climate space are, however, needed to foster the use of the EER metric internally and/or externally. Most notably, there would need to be:

- Sector-specific guidelines to ensure consensus and consistency on main assumptions and results;
- An industry-wide method/framework to allow banks to use this metric as a decision-making tool and as a key performance indicator;
- Access to specific data/metrics from clients to assess the EER (in a standardized way); and,
- A database with emissions factors for various technologies to be able to calculate the emissions impact of a project that aims to replace a technology with its low-carbon alternative (e.g., steel made with green hydrogen versus steel made using a BF-BOF; electric vehicles (EV) versus internal combustion engines (ICE), etc.).

## 24. STANDARD CHARTERED BANK

**Sector:** Bank

**HQ Geography:** UK (headquartered in London)

**Firm Overview:** Standard Chartered Bank (Standard Chartered) is a leading international cross-border bank with a footprint across the world's dynamic markets. It serves three client segments: Corporate & Investment Banking; Wealth & Retail Banking; and Ventures.

Standard Chartered chaired the Net Zero Banking Alliance (NZBA), the industry-led banking element of GFANZ from 2021-2024. Additionally, Bill Winters is currently a member of the GFANZ Principals Group.

The Group CEO and CSO are part of the World Economic Forum's Alliance of CEO Climate Leaders. This is a CEO-led community committed to raising bold climate ambition and accelerating the net zero transition by setting science-based targets, disclosing emissions and catalyzing decarbonization and partnerships across global value chains.

Standard Chartered has an important role to play in supporting its clients, sectors and markets to deliver net zero, but to do so in a manner that supports livelihoods and promotes sustainable economic growth. Standard Chartered currently provides financial services to clients, sectors and markets that contribute to greenhouse gas emissions; however, it is committed to net zero in its own operations by 2025 and in its financed emissions by 2050. This is set out in Standard Chartered's Net Zero Roadmap and progress towards this is disclosed in the Annual Report.

### SE ASIAN STEEL PRODUCER

**Sector:** Steel Production

**Company/asset/project geography:** SE Asia

**Company/asset/project description:** In 2023 Standard Chartered provided a US\$ 25 million transition trade finance facility to a prominent Asian steel company to support their ongoing procurement of scrap steel for their scrap-based electric arc furnace (EAF) production.

**Type of transaction or nature of FI relationship:** Financing structure: sustainable finance – working capital facility

### Background

Since its establishment in Vietnam in 2016, the client has been producing steel using 95-100% scrap as raw material and using electric arc furnaces (EAFs) in its production facilities. Compared to traditional blast furnaces, using EAFs to refine steel enables the steel scrap to be constantly reprocessed, thereby consuming less energy and reducing CO<sub>2</sub> emissions by an estimated 75%.

The client recognizes the environmental impact of steel manufacturing activities and has implemented a transition strategy that includes

using 100% EAF and over 90% scrap steel as a primary raw material. The client has been disclosing emissions since 2003 and has a net-zero target for 2050, along with interim 2030 decarbonization targets.

Efforts to decarbonize in the iron and steel sector must accelerate substantially if the world is to meet the goals outlined in the Paris Agreement. The emissions reduction potential of conventional steelmaking is limited, and innovation in the near term will be critical for the steel sector to move the dial on near-zero emissions steel production.



However, in the short term, use of scrap within steelmaking is a powerful lever for decarbonization of the steel sector. Scrap-EAF steelmaking is already used in many countries, though rates differ widely across the globe. Secondary steelmaking via scrap could be expanded in many nations, helping to decarbonize the steel sector.

## Methodology

The client produces steel via the primary Blast Furnace-Basic Oxygen Furnace (BF-BOF) method and recycled EAF route and so the emissions avoided are calculated on the basis that, had Standard Chartered not provided financing, the client would have instead procured cheaper raw materials and produced steel via the conventional BF-BOF route.

## Assumptions made for the baseline and projection calculations

- **Scrap steel supply:** client-specific, updated on a deal-by-deal basis
- **Scrap steel price:** client- and regional-specific, updated on a deal-by-deal basis
- **Kg:** US Ton conversion (static)
- **Coking coal saved per ton of scrap steel used:** varies, updated periodically as more literature emerges
- **tCO<sub>2</sub>/t coking coal:** relatively static, reviewed annually
- **EAF energy requirement per ton of steel:** varies, is technology-dependent, reviewed on an asset-by-asset basis (where available), average fallback EAF figure if not applicable
- **Vietnam grid factor:** varies; reviewed annually
- **Electricity as a total % of EAF emissions:** varies; reviewed annually

## Calculation steps

### Step 1: Determine an appropriate baseline

Gross emissions avoided were calculated based on the coking coal not used due to the procurement of scrap. The amount of scrap steel procured because of Standard Chartered's financing was taken from the bank's internal client information system. Two sources were used to determine the coking coal avoided per metric ton of scrap steel used in the EAF process.<sup>83</sup> The coking coal saved was multiplied by the direct emissions factor provided in the Sustainable Steel Principles (SSP) framework to calculate the gross emissions avoided using the EAF process. The avoided emissions are calculated on an annual basis.

To ultimately determine the baseline, the emissions from combusting coking coal used the conventional BF-BOF steel production route. The calculation assumes that 630 – 770 kg of coking coal is saved per ton of scrap steel used:

$$\text{tCO}_2/\text{t coking coal} = 3.06$$

### Step 2: Calculate the emissions from EAF steel production

- **EAF energy per ton of scrap steel** = 450 KWh multiplied by total scrap steel procured from the US\$ 25 million working capital facility provided by Standard Chartered. This figure (total KWh) is then multiplied by the national grid intensity of Vietnam.
- **Scope 2 (electricity procured)** = 67% of total EAF emissions, therefore figure uplifted for remaining 33%.
- **The total electricity usage (kWh)** = Average electrical energy consumption (EEC) factor (sourced from a steel specialist data provider) for the steel produced using the EAF (450 KWh) multiplied by total scrap steel procured from the

83 For additional detail, go to the Standard Chartered [whitepaper](#).

US\$ 25 million working capital facility provided by Standard Chartered.

- **Absolute emissions from electricity for EAF-produced steel** = The total electricity usage (kWh) multiplied by the national grid emission intensity (sourced from the nation’s Ministry of Natural Resources and Environment).
- **Final EAF production emission figure** = Absolute emissions from electricity for EAF-produced steel divided by a scaling factor (sourced from a steel specialist data provider) to account for non-electricity emissions in the EAF production process. This includes carbon monoxide and nitrogen oxide emissions resulting from the reaction of oxygen with carbon in the molten bath of steel within the melting process and from the refining process.

### Step 3: Calculate the net emissions saved

Emissions avoided includes Scope 1 and Scope 2, which is consistent with the Standard Chartered’s net-zero approach for steel.<sup>84</sup> Annual calculation and annual projection is based on dedicated financing.

EAF production has emissions, primarily from Scope 2 (electricity procured from the local grid). Therefore, the emissions from EAF production are subtracted from the gross emissions avoided figure to provide a more conservative net emissions avoided figure, or:

$$\text{Net emissions saved} = \text{gross emissions saved} - \text{EAF production emissions}$$

Theoretically, the net emissions saved figure can be applied on a forward-looking basis to estimate the expected emissions reduction (EER) figure for a specific time in the future.

### Use cases

- **Impact report:** Standard Chartered is actively considering how it reports on the impact of its Transition Finance activities. This may include use of the EER methodology depending on data availability at asset and entity level.
- **Internal analysis:** Each sector and product within the bank has a capital limit. For Standard Chartered’s high-carbon sectors, net zero factors are included in capital limit allocation considerations, i.e., how the capital is best used within the sector when the extrapolated emissions profile of clients and specific projects are factored in over the financing term. As such, the EER methodology could be a useful tool to incorporate the emissions saved for a specific green/transition project, or at the assessment stage when on-boarding a new client, or when refinancing an existing client.

84 For additional detail, go to the Standard Chartered [whitepaper](#).

## **ADVANCING DECARBONIZATION CONTRIBUTION METHODOLOGIES**

Decarbonization contribution methodologies and the use of forward-looking measures are still nascent. As discussed in the Note, further work is necessary on the EER approach, including further research and development of methodology, data sources, and use cases.

The following examples feature a range of resources and tools, all of which are in service of enabling the calculation and application of intervention-based and forward-looking measures, including validation and reporting of realized progress against these estimates on an annual basis. The examples include relevant methodologies and sector-specific guidance to support EER quantification at the real-economy level, an open access database to close data gaps and enhance the quality of calculation, and a structure for incentivizing the financing of emissions reductions.

The GFANZ Secretariat would like to thank AEFDi, Climate Dividends, Project Frame, and WBCSD for their contributions to this publication.

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## AEFDi

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The Avoided Emission Factors Database initiative (AEFDi) is a project to build a methodological standard for calculating the avoided emissions (AE) of technologies contributing to the low-carbon transition. The project is led by consulting firms ICare by BearingPoint and Quantis, a BCG company, who are working closely with Mirova, Robeco, and Edmond de Rothschild to define this method and calculate emissions factors for 80 low-carbon solutions/technologies. The goal is to determine emissions factors that can then be used by data providers and companies to calculate their contribution to avoided emissions at the company level.

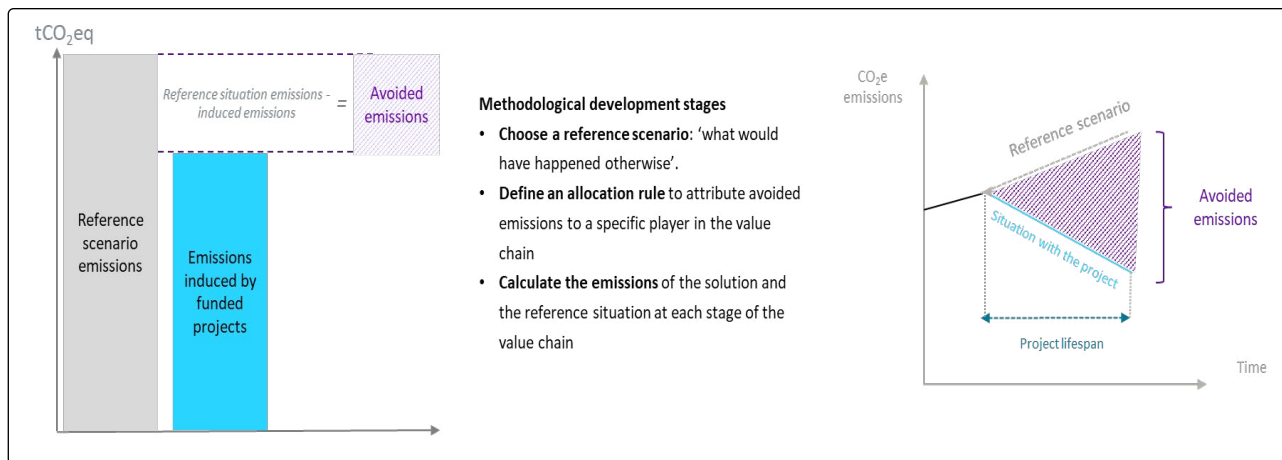
The concept of AE is used to determine a project's contribution to the low-carbon transition. The principle involves calculating the quantity of emissions that would have been emitted if the

solution had not been developed. To determine avoided emissions, it is necessary to compare the emissions of a project against a reference scenario. For example, to determine the AE of a new wind farm project you compare the emissions taken over the project's entire expected life cycle to the emissions of a reference scenario that includes the average electricity sources in each country and the other energy sources that the new wind farm replaces.

While the concept of AE is well understood and documented, currently there is less agreement regarding the key assumptions underlying the calculation of AE (for example, the choice of reference scenario). Methodologies can vary widely from one sector of activity to another and there is a need for defined rules for calculating AE, both globally and by sector.

The ambition of the AEFDi project is to propose a methodology to be used to harmonize calculations.

**Figure 61: General presentation of the concept of avoided emissions**



Beyond the consulting firms and strategic founding partners described above, the initiative is composed of several working groups:

- **An initial funder working group** of around 15 financial sponsors who, in exchange for their support, have access to the future platform for free for a limited period. This group provides feedback on the construction of the calculation method and prioritizes the low-carbon solutions/technologies to be processed and included in the database.
- **A data provider working group** with six members whose role is to provide input for the construction of a protocol for adapting these emissions factors at company-level.
- **A corporate working group** of around 10 companies with expertise on avoided emissions, thus providing valuable feedback on the methodological construction.
- **A scientific committee** of experts (such as the WBCSD, ADEME, Climate Dividends, and Prime Coalition) to validate the main methodological principles and ensure that they are in line with the main standards available.

**Avoided emissions indicators**

The role of avoided emissions indicators is to quantify the low-carbon potential of a given solution or technology. The avoided emissions indicator compares a project with the reference situation at the time of the project’s creation or investment decision, as well as the likely evolution of the various sectors of activity from a carbon emissions point of view. A low-carbon solution today may not be the same tomorrow, and avoided emissions indicators make it possible to quantify this dynamic aspect.

Another feature of avoided emissions indicators, is that by comparing a given project to a reference scenario, they provide clarity about the end uses of each technology, and particularly its role in decarbonizing various sectors down the value chain. For example, one kilowatt of renewable electricity installed in 2024 will not only decarbonize a given country's electricity mix

but will also enable the substitution of different energies used in several sectors, notably in green mobility, green industry, and low-carbon buildings. This new electricity capacity should, therefore, not just be compared with the current electricity mix, but also, in part, with the different energy sources that it will replace.

The generic AE calculation formula is as follows (ICare/Quantis proposition):

$$\text{Avoided Emissions} = RE_{\text{coeff}} \times \left( \sum_i^n FU_i \times \left[ \text{Baseline} \left( \frac{\text{kgCO}_2\text{e}}{\text{FU}} \right)_i - \text{Solution} \left( \frac{\text{kgCO}_2\text{e}}{\text{FU}} \right)_i \right] \times TVC_i \right)$$

Where:

- **i** corresponds to each year for which a solution is compared to a baseline, starting at the **base year** of the calculation. Most of the time, it corresponds to the time when the solution is available to the market;
- **n** corresponds to the **end year** of the calculation;
- **FU** (Functional Unit) refers to the **unit** (e.g., kWh electricity, sqm. window...) on which the comparison between the performance of a solution (product or service) and the baseline is made. **FU<sub>i</sub>** represents the amount of the solution that is provided on year **i**, given in the specified unit;
- **Baseline**  $\left( \frac{\text{kgCO}_2\text{e}}{\text{FU}} \right)_i$  corresponds to the **GHG emissions related to the baseline** for the delivery of the specified functional unit on year **i**. It may vary according to external decarbonization trends (e.g., IEA STEPS);
- **Solution**  $\left( \frac{\text{kgCO}_2\text{e}}{\text{FU}} \right)_i$  corresponds to the **GHG emissions induced by the solution** for the delivery of the specified functional unit on year **i**;
- **TVC<sub>i</sub>** refers to the **time-value of carbon** on year **i**, stating that present GHG emissions are more harmful than future GHG emissions;
- **RE<sub>coeff</sub>** refers to the discount coefficient applied to consider the **rebound effect** that can occur when expected gains from new technologies are balanced by an increase in the amount of consumption of the specified functional unit;
- **Avoided Emissions** corresponds to the difference of GHG emissions between a baseline scenario and the solution scenario, weighted when relevant by a rebound effect coefficient and a discount factor for GHG emissions.

### Choosing a reference scenario

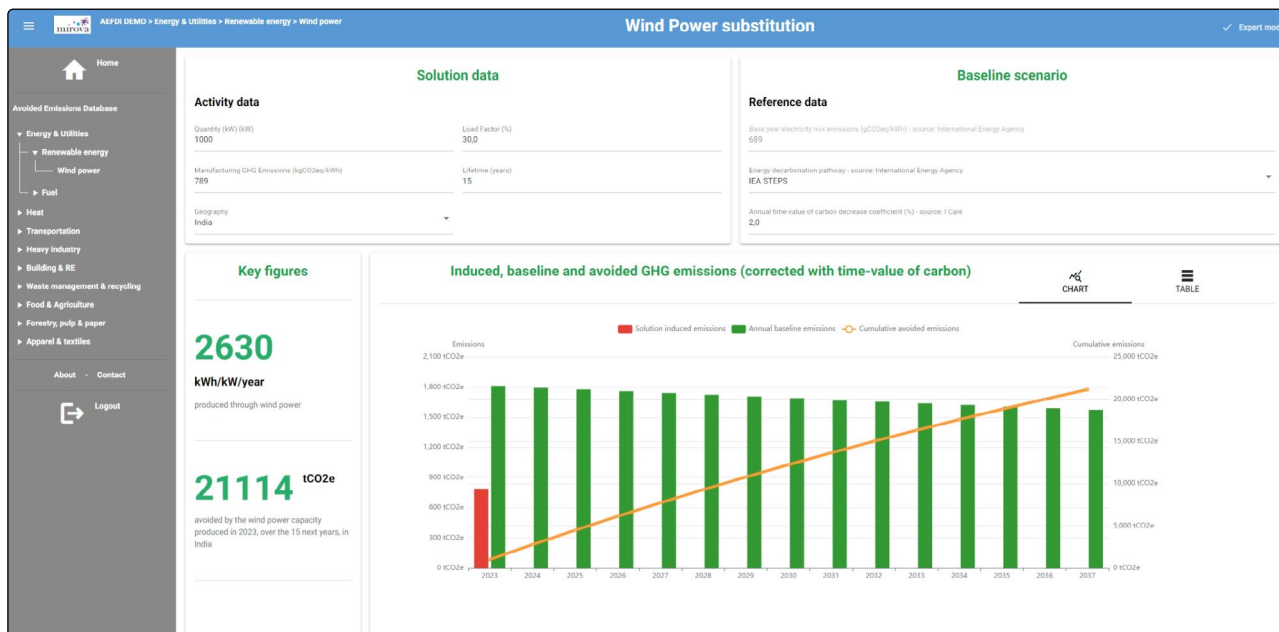
The choice of reference scenario is crucial in the development of this methodology. Depending on the chosen reference scenario, avoided emissions can vary widely. An ambitious reference scenario will lead to lower avoided emissions by construction, whereas a business-as-usual scenario will tend to maximize them. When deciding on a reference scenario, a number of factors should be considered, such as:

- **The ambition of the scenario:** for example, is the emissions target of the reference scenario ambitious (such as net zero 1.5 degrees C) or a business-as-usual scenario with no real move toward a low-carbon future.
- **Granularity:** is the reference to a micro-sector scenario that does not take account of substitution effects or a macro-sector scenario that considers the impact of the development of certain technologies on the evolution of the final product mix?

AEFDi’s goal is to come up with guidelines — both general and sectoral — related to emissions factors and their underlying reference scenarios and key assumptions. The first task is to establish a doctrine on these issues, regardless of the sector. The AEFDi methodology includes a series of choices for selecting the right reference scenario based on the available data. The priority, as far as possible, is to adopt a forward-looking scenario that best captures the trend in the sector, considering existing and expected future regulations, but without adopting a prescriptive approach (e.g., what needs to be done to remain on a 1.5 degrees C pathway). These scenarios will be partly based on existing information, such as that provided by the International Energy Agency (IEA), or a construction by ICare and Quantis based on their specific sectoral expertise. The platform hosting the emissions factors as well as the calculators will be published at the end of 2024.

**Figure 62: An illustration of a potential future web-based platform, on top of the library of the default avoided emissions factors**

After building the database, ICare by BearingPoint and Quantis will own the AEFDi platform. The platform will be regularly updated and enrich the database with the latest scenarios and it will expand the list of solutions analyzed to other sectors.



Source: AEFDi

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## Climate Dividends

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The [Climate Dividends Association](#) (the Association) is a non-profit whose mission is to foster equity investment in solutions that contribute to global decarbonization through the development and promotion of what it calls Climate Dividends (CDs). The co-founders of the initiative are Ademe (The French Agency for Ecological Transition), [Mirova](#), [2050](#), [Team for the Planet](#), [Sweep](#) and Fondation Kanopée Partage. The members of the association are made up of private stakeholders (financial institutions, companies), nonprofit, academic institutions, and individuals.

Climate Dividends, as an additional financial indicator, correspond to the positive climate contribution of companies' activities measured by the avoided or removed emissions. CDs can be distributed to – and claimed by – the company's equity shareholders. CDs are similar to financial dividends in that they are distributed to shareholders based on their capital ownership in the company, but their "value" is based on the amount of CO<sub>2</sub>e avoided or removed by the company. One ton of CO<sub>2</sub>e avoided or removed by the company is equivalent to 1 Climate Dividend distributed to the shareholders, based on their percent of capital ownership.

The current users are the companies issuing and distributing Climate Dividends (startups, SMEs, big corporates) and the financial institutions receiving Climate Dividends from their portfolio companies (e.g., Eurazeo, Demeter, Mirova, Meridiam, 2050, Generation IM, Via-ID, Daphni, Serena, among many others). Beyond those users, other stakeholders are involved in the initiative, such as carbon consultants

supporting companies in measuring their impact to issue CDs, auditors intervening as independent third parties, and professional networks supporting the initiative to share the methodologies and the initiative among their members.

The association's goal is to make positive climate contribution claims (as measured by avoided or removed emissions) more rigorous, comparable, and accountable. The association achieves this goal through:

1. **Standardized, transparent, and clear generic rules:** these rules are described in its [Protocol](#), which is publicly available.
2. **Supporting development, promotion, adoption of the sectoral applications of these methodological rules:** this involves publicly recognizing existing methodologies or collaborating with other initiatives and private stakeholders to build methodologies that do not currently exist and promoting them publicly to ensure similar activities always rely on the same methodological rules.
3. **Ensuring calculations are rigorous and verified:** methodologies are validated and calculations are verified by an independent third party and are all publicly available on the [registry](#).

The distribution of CDs to shareholders means that positive climate contribution (i.e., emissions avoidance/removal) can more easily be taken into account when making investment and financial decisions. Furthermore, ratios relying on Climate Dividends (for example, CDs received per dollar invested) can be used in the due diligence process, performance evaluation and reporting and in financial valuation (by enabling quantification of climate goodwill).



The methodology is publicly available through accessing the protocol. [An overview of the methodology](#) is outlined below:

### 1. Measure all avoided emissions

First, there are some eligibility criteria, both at the company-level and at the activity-level. If those criteria are met, the company assesses its impact respecting the Climate Dividends protocol and then formalizes it in a document called a Solution Detailed Declaration (SDD).

The main key points of the impact assessment are:

- Definition of a functional unit (for example, 1kWh of heat) and of the system boundaries;
- Definition of a reference scenario (for example, average market options to provide 1kWh of heat); and,
- Comparative GHG assessment (over the whole life cycle) of a solution scenario (for example, a heat pump) with a reference scenario.

### 2. Compute the claim

Each activity generating avoided emissions is assessed based on the hypothesis defined and the company's activity data. Also, a relevant attribution key is applied to attribute the avoided emissions to the different stakeholders involved in the value chain.

The attribution key helps to avoid double counting the positive impact from avoided/removed emissions among different actors in their value chain. For example, if a fund has in its portfolio a company that produces solar panels and one that

sells/installs them and no attribution key is applied, it means that both companies will claim 100% of the avoided emissions and the fund investor would claim to have contributed to those avoided emissions twice.

In addition, the use of an attribution key enables a company to claim avoided emissions that it is directly contributing to. It encourages a value creation approach and it makes it easier to compare which activities/companies are effectively contributing; both for companies that want to maximize their impact and for investors that want to select and report on their investments.

It remains a challenge to define an attribution key that satisfies all stakeholders, but it is acknowledged that it is important to integrate it into the process and then to progressively adjust its value.

### 3. Validation and verification

An independent third-party intervenes to validate the methodology (in compliance with the protocol) and to verify the calculation.

### 4. Issuance and distribution of Climate Dividends

Based on the verified emissions:

- Issuance of Climate Dividends (stored on a public registry) following the rule of 1 Climate Dividend for each ton of CO<sub>2</sub>e of avoided/removed verified > 1 Climate Dividend; and,
- Distribution of Climate Dividends to the shareholders (stored on a private registry).

## Takeaways and learnings

It is important for companies and financial institutions to have harmonized, transparent methodologies to enable comparability and adoption at scale of solutions that avoid or remove emissions.

Ensuring clear eligibility criteria regarding such methodologies is necessary to avoid having irrelevant claims regarding avoided/removed emissions (for example, from oil and gas companies). Climate Dividends focus on proposing transparent and precise generic methodological rules and on promoting shared and common sectoral applications of these rules.

This year, Climate Dividends Association is collaborating with several companies and expert initiatives on including, among others, renewable energy, waste, bike mobility, and circular economy. Thanks to its standardized and transparent process, companies that receive CDs report feeling more confident in communicating about their positive climate impact and they use it to monitor their climate strategy.

The Association recognizes the need for further work and improvement of the Climate Dividends

Protocol and other initiatives regarding setting methodological rules. Most notably:

- **Public consultation on the Climate Dividends Protocol:** this is planned for the fourth quarter of 2024 to confirm and refine some of the rules and main assumptions.
- **Integration of CD in financial rationale:** the Association is coordinating a working group composed of financial institutions, experts, and academics on “how to build the financial use case for climate value through CDs”. Its objectives are to:
  - Use performance ratios to evaluate companies based on CDs (for example, Euros/dollars invested versus CDs received; revenues versus CDs issued); and
  - Integrate CDs in the due diligence process and in financial valuation of companies (for example, estimation of the CDs issued during the investment period, discounted climate dividends flow with a defined value attributed to a CD).
- **Applying the methodology and spreading the use of Climate Dividends among companies and shareholders:** every year, companies join the initiative to issue and distribute CDs, following the process led by the Association. In 2024, 38 companies and their investors participated; the Association is expecting more than 100 users for 2025.

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## Project Frame

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[Project Frame](#) is a program, convened by [Prime Coalition](#), a nonprofit catalytic investor and co-creator of the [CRANE tool](#). Project Frame is a collaboration of investors and experts working to build frameworks and tools to assess the potential impact today's climate investments will have on GHG emissions in the future. Its mission is to mitigate climate change by demystifying climate investing and improving impact measurement and management (IMM) to drive capital toward the best possible climate solutions. As of May 2024, the Project Frame community has over 900 observing members, including 345 investment firms representing approximately US\$ 670.1 billion in venture and private equity assets under management.

Project Frame is working to build consensus around the terminology, methodology, and current practices for investors dedicated to improving GHG impact assessment. Initially its work was focused on providing guidance primarily for venture capital and private equity investors in the hopes that all investors can be equipped with the knowledge and resources necessary to assess potential GHG impact prior to deploying capital. It is in the process of expanding its programming to include guidance for limited partners, as well as growth equity and institutional investors so that all capital allocators can make more informed decisions to secure a livable climate.

In 2023 Project Frame released [Pre-Investment Considerations: Diving Deeper Into Assessing Future Greenhouse Gas Impact](#), which represents its current consensus-based approach for forward-looking emissions impact assessment. In 2024, Frame also started releasing a series of [case studies](#) to demonstrate the methodology in action.

### Project Frame methodology, lessons learned, and opportunities for further work

Project Frame is working to build consensus-based and science-backed forward-looking emissions impact methodologies, and complementary resources, such as [topic-specific publications](#), [public discussions](#), and [a glossary](#), to encourage field-wide consistency and knowledge-sharing. It encourages transparency through its [Investor Profiles](#) and [case studies](#), in which investors highlight their GHG impact assessment practices and aim to mitigate “greenwashing”.

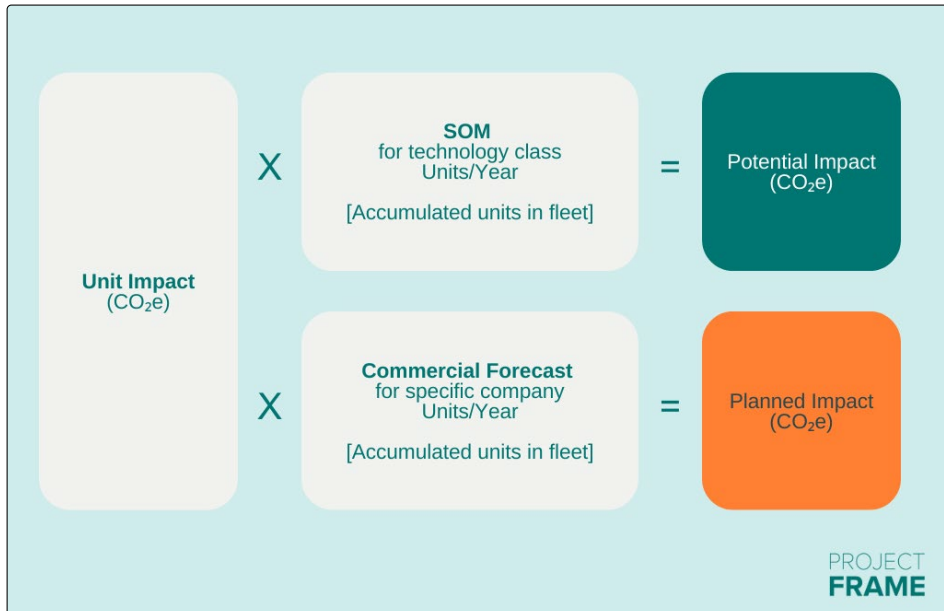
Project Frame's pre-investment guidance lays out the essential steps investors can use to quantify the future GHG impact for early-stage climate solutions which, in its simplest form, is the unit impact of a proposed climate solution multiplied by the number of units deployed over a specified time frame. Unit impact, often expressed as the difference between one unit of the incumbent and one unit of the solution, may change over time as the emissions from both the incumbent and solution change.

Once unit impact has been determined, an investor can calculate either **potential impact** or **planned impact**, depending on the timeframe of the evaluation or stage of the solution being evaluated, among other factors.

- **Potential impact** is the change in GHG emissions that an innovation may cause, compared to an incumbent and based on a standardized growth trajectory that assumes that the innovation takes over the Serviceable Obtainable Market (SOM).
- **Planned impact** is the change in GHG emissions that an innovation both intends and expects to cause compared to an incumbent and based on a realistic bottom-up analysis of its business model.

**Figure 63: Basic calculation for potential and planned impact**

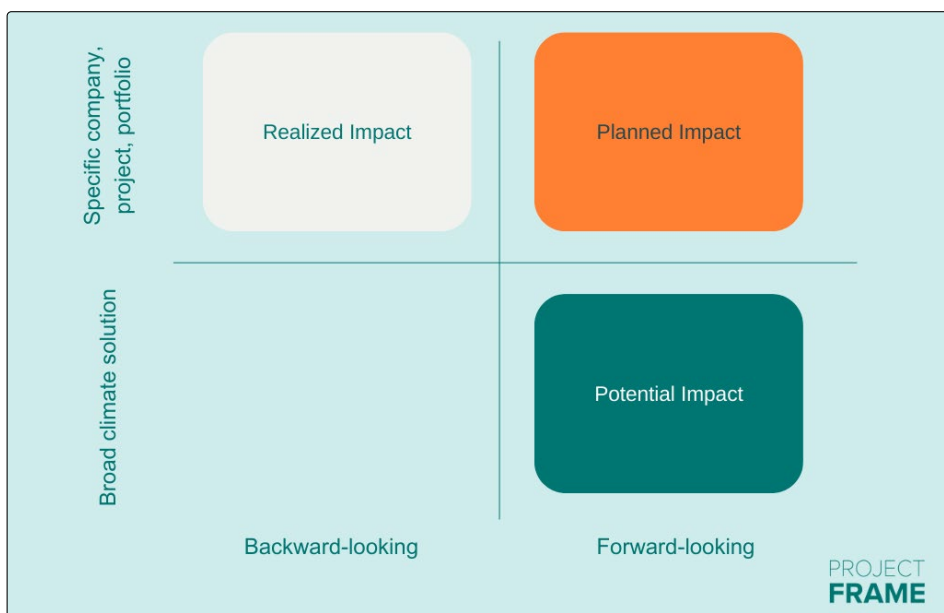
The basic calculation at the core of Project Frame’s inaugural pre-investment methodology guidance states that GHG impact is unit impact multiplied by volume. The volume used in the calculation can change depending on whether one is assessing for potential or planned impact, among other factors.



Source: Project Frame

**Figure 64: Impact types**

Project Frame delineates impact types by whether they are forward- or backward-looking and whether the impact is being applied to a broad climate solution or a specific company, project, or portfolio.



Source: Project Frame

Through its work, Project Frame has observed the following:

- Developing and adhering to concise and precise common language continues to be an important goal and challenge, which Project Frame aims to tackle through its growing glossary.
- Quantification of GHG impact can — and should — be a tool used to serve investment decision-making. However, investors need to get better at communicating their reasoning around the various decisions underlying quantification, including the selection of incumbents and baseline scenarios; how they handle the absence of data; and more.
- A clearer articulation of these qualitative considerations should be included in methodological procedures, which Project Frame encourages in its investor profiles and case studies. The procedures also illuminate how its guidance applies to real-world scenarios.
- Shepherding consensus-driven processes that intentionally include diverse perspectives from different geographies with expertise across fields such as finance, government, and tool development remains complex. However, such consensus is important when creating comprehensive and practical resources to assess the forward-looking impact of emerging climate solutions.
- Access to transparent and reliable data, such as emissions factors, commercial forecasts, and dynamic baseline variables, continues to be a challenge.
- There continues to be a need for accessible educational materials and software tools both to reduce the barrier to entry for emissions reduction analysis and to hold private providers to a higher standard.
- Project Frame’s rapidly growing community and the willingness of community members to participate in its programs demonstrate that this work is not only critical to mitigating climate change but also that the steps to achieve emissions reductions must be actionable and measurable.

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## WBCSD

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### WBCSD Avoided Emissions Guidance Methodology

The World Business Council for Sustainable Development (WBCSD) is a non-governmental organization whose member companies aim to accelerate the transition to a sustainable world by making more sustainable businesses more successful.<sup>85</sup> WBCSD believes the business case for sustainability is enhanced through the use of tools, services, and models. One of the tools it has developed is a platform for system-wide collaboration and innovation in transformative, low-carbon solutions through the consistent application of intervention accounting/avoided emissions. More than 60 member companies from the energy; mobility; agriculture and food; chemicals; digital; built environment; and industry/automation sectors are part of the WBCSD Avoided Emissions Track.

To advance avoided emissions and intervention-based GHG accounting methodologies, WBCSD is liaising and collaborating with:

- Standard setters, such as ISO, IEC, and PCAF;
- Policy actors, such as the Japanese Ministry for Economy, Trade, and Industry, the UN, and the European Commission; and
- NGOs, such as Mission Innovation, Exponential Roadmap, and Prime Coalition/Project Frame.

The work program is primarily aimed at real economy actors as WBCSD's Guidance on Avoided Emissions helps companies to assess and report their decarbonization contribution beyond their own footprint reduction. WBCSD's Avoided Emissions Track also acts as a bridge between business, policy, and finance. Through a dedicated Finance & Policy workstream WBCSD wants to ensure strategic, methodological, and terminological alignment with transformative policy and transition finance agendas.

The program also includes an Implementation workstream where WBCSD works with its member companies to develop sector- and solution-specific applications as well as implementation guidance for corporate decision-making. Deep dive projects for the agriculture and food sector as well as built environment sector kicked off in summer 2024. WBCSD's Methodology workstream aims to establish robust and transparent avoided emissions methodology guidance and provide the base for further standardization of intervention-based GHG accounting, e.g., by ISO and GHG Protocol.

WBCSD's [Guidance](#) is one of the leading frameworks for businesses in the avoided emissions methodology context. While it is not the same as EER, it similarly adopts a dominant intervention-based perspective on measuring and assessing corporate climate action. The Guidance provides guardrails to ensure transparent, robust, and comparable avoided emissions claims and aims to harmonize avoided emissions calculation and disclosure. WBCSD aims to strengthen the entity level in this context because the dominant scope for avoided emissions assessments typically only includes solution- and project-level calculations.

### Through its work, WBCSD has identified several key themes

There is a strong need for a reliable and practical standardized approach to intervention-based claims. While reduction-led, inventory-based, case-by-case approaches to climate action are more established and remain highly relevant, they can be complemented with opportunity-led, intervention-based, systemic approaches that build on robust impact accounting methodologies. The momentum around avoided emissions is high but the transformative potential is not yet maximized due to a lack of technical guardrails, methodological harmonization, implementation guidance, and cross-sectoral alignment.

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85 [WBCSD. Overview-About Us.](#)

The WBCSD Avoided Emissions Guidance was well-received by industry, finance, and policy actors and the overall resonance is positive. The WBCSD Guidance was referenced in the final communiqué of the 2023 G7 Climate, Energy, and Environment Ministers' meeting, and avoided emissions was mentioned in the 2024 G7 meeting final communiqué as a key concept to accelerate global decarbonization. Since the Guidance launch in 2023, WBCSD has collaborated with member companies, scientists, NGOs, financial, and governmental actors and other stakeholders to test and further enhance it.

The WBCSD Avoided Emissions Guidance proposes eligibility criteria and technical guardrails to enable companies to make credible avoided emissions claims. These include, for example, that avoided emissions claims should:

- Only be made when the organization has public, third-party verified, and science-based Scope 1-3 emissions reporting and reduction targets
- Be reported strictly separately from GHG inventory footprints in corporate reporting and disclosure
- Include an assessment of potential side effects and rebound effects
- Not be used to claim a company's carbon neutrality or compensate inventory emissions

The WBCSD will further enhance its Guidance on Avoided Emissions and plans to launch a revised Guidance and open consultation in the next 6-9 months. It expects and encourages further methodological development and harmonization in this context.

WBCSD is working on industry use cases to develop good practice in terms of avoided emissions assessment and disclosure. As a first step, WBCSD is developing a pilot use case repository that includes one-pagers of several avoided emissions use cases, such as biofuels, utilities solutions, low-carbon animal food, etc. The pilot repository with a limited number of use cases can be found [here](#). Each one-pager is an excerpt from a more comprehensive technical template that WBCSD has developed and tested with members to support and guide robust and verifiable modeling behind avoided emissions claims. While the WBCSD Avoided Emissions Guidance primarily addresses late-stage companies, WBCSD is working on alignment with early- and growth-stage use cases and methodologies. It is key for transformative change to coordinate and strategically combine the decarbonization efforts of organizations with varying maturity levels (early-, growth-, and late stage).

WBCSD is collaborating and seeks further engagement with finance and policy actors. WBCSD collaborated with GFANZ, PCAF, GX League, and Circularity Capital on an insights paper to explore the links between avoided emissions use cases and sustainable finance asset classes. The [paper](#) was published in June 2024.

WBCSD is taking on a role in the efforts to strengthen ties between avoided emissions in the real economy, transition finance, and transformative policy. These efforts do not only depend on methodological work but also on technological innovation, market adoption, and the mobilization of resources.

## OTHER FORWARD-LOOKING METRICS AND APPROACHES

As discussed in the Note, existing methodologies, such as financed emissions, that rely on historical or point-in-time metrics have their limitations in the context of scaling transition financing across the real-economy where it is needed the most.<sup>86</sup> In light of these limitations, as well as the ongoing areas of further work identified in the Note on the concept of EER — including data limitations, methodological nascence, and challenges particularly with baselining — an outline of two alternative metrics have been included below.

These approaches may better suit investors that are looking to apply a forward-looking perspective to their portfolio without delving into asset or entity-level specific emissions reduction potential. They may complement financed emissions metrics and targets and do not need to be used together with EER.

- The two metrics provide a basis for benchmarking and approaches to assess the Performance Attribute for Aligned and Aligning entities and by weighing the scores of individual assets/entities it offers a way to aggregate forward-looking measures to the portfolio level.
- In instances where an investor chooses to assess an EER metric, analyzing the key drivers of EER can enhance the investor's understanding of the divergence derived by these approaches by providing additional details and attribution of the individual assets/entities' emissions profile over time.

Complementing financed emissions with the alternative metrics and/or EER may better inform an investor's own implementation or engagement strategies with their clients and portfolio companies.

The GFANZ Secretariat would like to thank IIGCC and MSCI for their contributions to this publication.

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<sup>86</sup> GFANZ Secretariat. [Technical Review Note: Scaling Transition Finance and Real-Economy Decarbonization](#), December 2023.



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## IIGCC

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### Using Cumulative Benchmark Divergence (CBD) to assess portfolio alignment

The Net Zero Investment Framework (NZIF) — co-created by AIGCC, Ceres, IGCC, and IIGCC with investor consultation — is the most widely used resource by institutional investors as they consider how they will set and implement their individual net-zero goals. Its most recent update (2.0), released in June 2024, re-emphasized the intended role of its Portfolio Decarbonization Reference Objective in translating net zero goals into quantitative objectives and understanding changes in portfolio emissions over time. It also clarifies that a focus on using financed emissions as part of target setting is not desirable. Many investors have highlighted the perverse incentives that such a focus can have for financing emissions reductions in the real economy.

Therefore, the question of how to set credible portfolio objectives and measure progress toward them remains for investors. As has been previously noted, the reliance on Expected Emissions Reduction (EER) for measuring progress against a hypothetical business-as-usual (BAU) scenario also presents ongoing challenges that necessitate further development (as discussed in the Note on page 102).

One approach that IIGCC feels has merit is Cumulative Benchmark Divergence (CBD). Those that have read the [GFANZ Measuring Portfolio Alignment: Driving Enhancement, Convergence, and Adoption](#) report may already be familiar with it.<sup>87</sup>

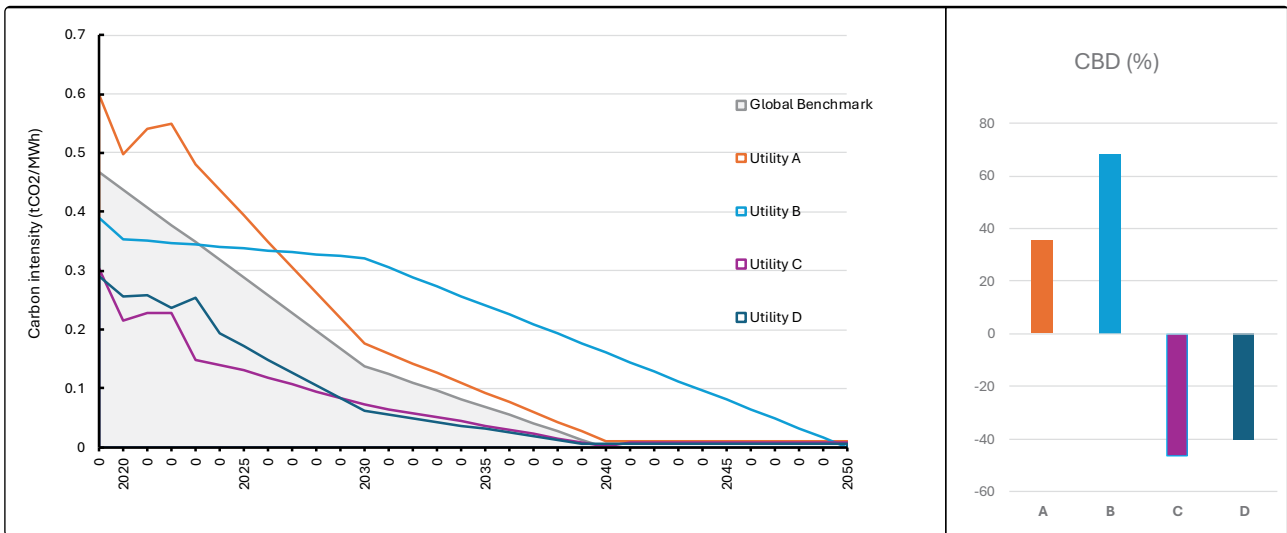
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<sup>87</sup> IIGCC's methodology, including examples of its application to a publicly available dataset from the Transition Pathway Initiative (TPI) Centre is described in: [From asset to portfolio alignment](#).

Essentially, CBD measures the difference between the decarbonization trajectory implied by a company’s emissions target and a climate benchmark (such as those generated by SBTi or TPI) over the whole pathway. This method has several advantages over existing binary approaches to assessing asset-level alignment,

one of which is that the cumulative approach better reflects the way that emissions impact the climate, while the single variable output makes it easier to compare the alignment of multiple companies (see Figure 65) as well as capture the changes to targets over time.

**Figure 65: Carbon performance of electric utilities against the global 1.5 degrees C sector benchmark**

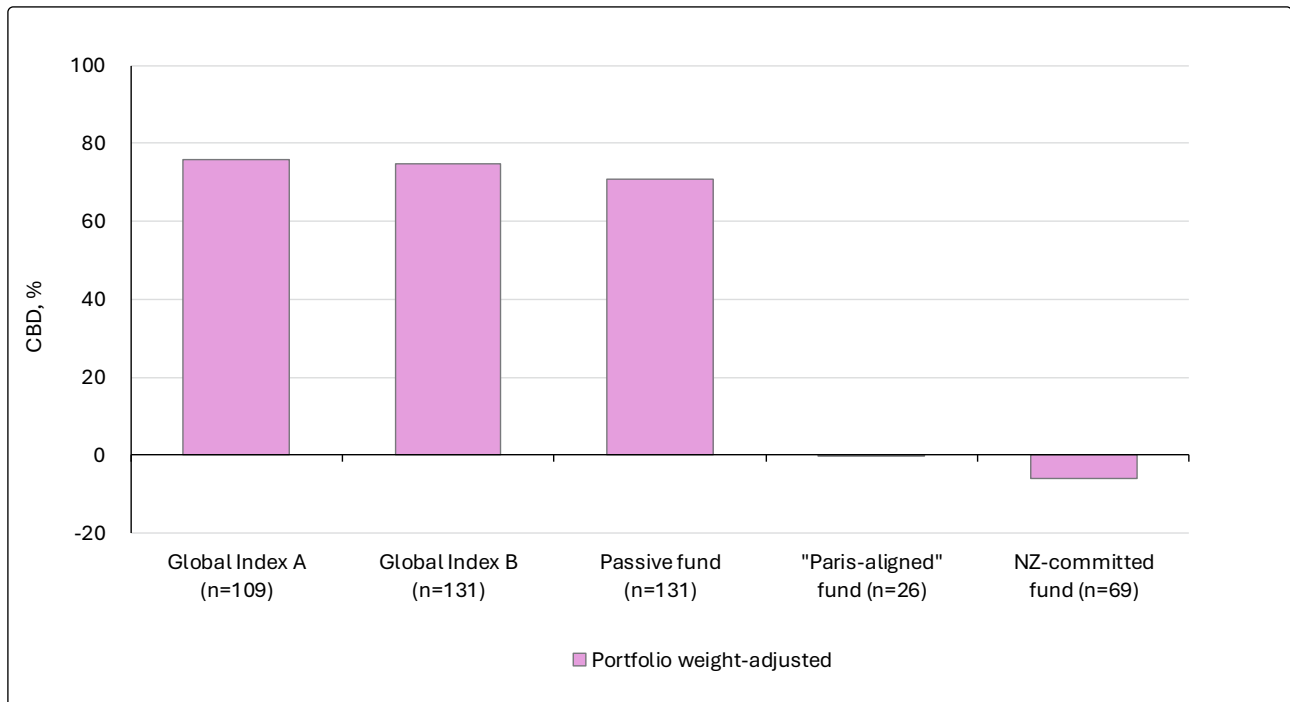


Source: IIGCC analysis based on company-reported and Transition Pathway Initiative (TPI) Centre data

Arguably, one of CBD’s biggest advantages is that its single figure alignment scores can be aggregated to measure overall portfolio alignment. Figure 66 compares the CBD scores of a range of funds and the broader index. It shows funds holding emissions intensive companies with net-zero targets with a much

lower (better) score. Unlike financed emissions, CBD provides a forward-looking measure of alignment of a portfolio that may be useful to investors seeking to reduce the emissions of carbon intensive assets they own, whether through engagement or supplying Transition Finance.

**Figure 66: CBD scores of low carbon funds compared to a passive fund and global indexes**



Source: IIGCC analysis based on funds belonging to two IIGCC members (anonymized) and a global index

The numbers of companies analyzed in each index is shown in brackets with scores aggregated by portfolio weight. A score of zero or below indicates alignment with a 1.5 degrees C benchmark.<sup>88</sup>

However, as with all metrics, there are caveats. In IIGCC’s view, a CBD score should not be used in isolation to measure the impact of financing or engagement: company-level net zero pathways are arguably only credible when backed by a convincing quantified strategy and when emissions are demonstrably tracking toward them. Currently, there is no data coverage outside the most emissions-intensive sectors. Also, unlike the decarbonization contribution methodology approach described by GFANZ, CBD does not currently directly capture the contribution to decarbonization made by investing in Climate Solutions. However, IIGCC believes that these

limitations could potentially be addressed and expects to bring forward further work in these areas over the next year.

[Further details on the CBD methodology](#) are available. For an example of how it can be applied to regional benchmarks in the power sector, see [here](#). IIGCC members can access a [CBD data set](#) and [implementation guidance](#).

88 For further detail see IIGCC. [From asset to portfolio alignment](#).

## MSCI

### Emissions Reduction Potential (ERP): an approach by MSCI

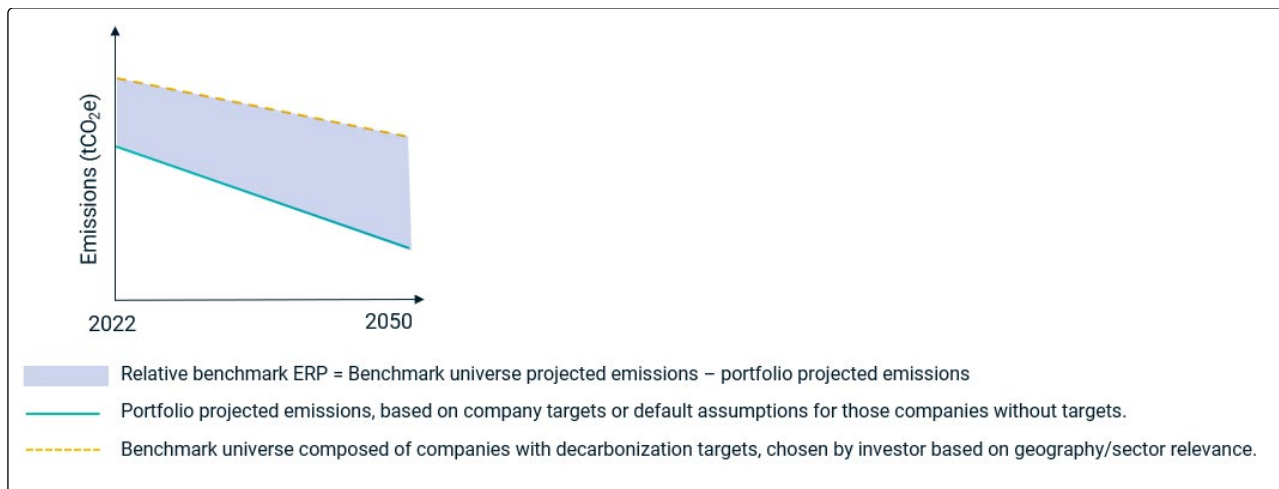
In this example, MSCI introduces a modified version of Emissions Reduction Potential (ERP), a methodology proposed by the GFANZ Secretariat to provide a forward-looking view of companies’ decarbonization efforts, instead of focusing on present-day financed emissions.

In its Note “Scaling Transition Finance and Real-economy Decarbonization” from December 2023, GFANZ defined ERP as a forward-looking methodology to “measure the decarbonization efforts inside of an entity’s emissions boundaries”<sup>89</sup> over a specified time horizon, compared to a counterfactual business-as-usual (BAU) baseline pathway. Put simply, the metric brings focus to the impact investors may have on corporate emissions trajectories, in contrast to the present-day financed emissions measurement (which may encourage divestment rather than real-world transition). This concept is meant to support the measurement

of GFANZ Aligned and Aligning key transition financing strategies aimed at decarbonizing companies’ operational and value chain emissions (as opposed to Climate Solutions financing where measuring avoided emissions is more applicable).

Figure 67 sets out a modified version of ERP on a proof-of-concept basis. Building a BAU counterfactual at company level is challenging. To be credible, it must reflect evolving public policies with multiple implications at sector and company level. Instead of this technically demanding counterfactual, the below approach offers a relative decarbonization benchmark. In short, it aims to compare the projected emissions of a given portfolio to a subset of comparable companies with climate targets in a larger investment opportunity set, such as a widely used market index. The rationale for selecting such a subset is to compare the portfolio companies against the decarbonization performance of a group of companies that face the same sectoral/regional constraints. The approach relies on comparison, rather than a counterfactual.

**Figure 67: Relative benchmark ERP proof-of-concept**



89 GFANZ Secretariat, Scaling Transition Finance and Real-economy Decarbonization, December 2023. P. 63.

Comparable companies within the investment opportunity set can be selected according to various types of decarbonization targets depending on the investor's preferences (e.g., any decarbonization target, net zero targets, SBTi-approved targets).

For example, consider an investor who wants to benchmark the forward-looking decarbonization of their European markets portfolio. They could compare the projected emissions of their portfolio (including companies without targets) with the projected emissions of the subset of companies with decarbonization targets that are part of a European markets index, using the (rebalanced) weights relevant to this index.

Attributing projected emissions in line with the Partnership for Carbon Accounting Financials (PCAF) means that the “owned” projected emissions baseline may differ between the portfolio and the benchmark universe (see baseline emissions in 2022 in Figure 67). This highlights the difference between portfolio and benchmark universe regarding recent financed emissions in addition to the difference in forward-looking emissions trajectories. The PCAF convention also means that the portfolio ERP can be influenced by portfolio allocation instead of real-world company decarbonization — not only for the MSCI approach, but also in the GFANZ ERP approach. This may pose challenges for investors who aim to measure their real-world decarbonization impact.

The MSCI approach involves first aggregating attributed projected emissions of the specific portfolio (following PCAF methodology) and being clear about the default decarbonization trajectory assumed for companies without targets (e.g., historical emissions trend). Then the benchmark universe weights are rebalanced to match the subset of companies that have decarbonization targets and applied to the total investment value of the specific portfolio. This process amounts to tailored benchmarking.

This modified ERP approach, as shown in Figure 68, helps assess a portfolio's decarbonization performance relative to a set of comparable companies with decarbonization targets. If the set of comparable companies is based on an index, the relative decarbonization benchmark would be based on consistent criteria, which may help comparison across investors' portfolios. The modified ERP approach does not make any assumptions about a counterfactual, hypothetical state of the world. Rather, it compares the decarbonization performance of a portfolio to that of a similar investment universe of companies that made plans to decarbonize given their specific sectoral and regional constraints.

**Figure 68: Hypothetical benchmark universe of companies with decarbonization targets** (Note: In this example, the approach is shown in detail only for Companies A-D; however, this approach would normally be applied across all companies within a portfolio)

**1. Select initial benchmark universe weights**

Company	Benchmark universe weight	Decarbonization targets
Company A	3%	Yes
Company B	2.5%	Yes
Company C	2%	No
Company D	1%	No
[Other companies]	91.5% [total]	[Mix of Yes and No]

**2. Rebalance weights for subset of companies with decarbonization targets**

Company	Benchmark universe weight rebalanced	Decarbonization targets
Company A	7%	Yes
Company B	5.8%	Yes
[Other companies with targets]	87.2%	Yes

Note: Because companies C and D do not have decarbonization targets, they are not included from this step onward.

**3. Calculate the attributed projected emissions using the PCAF methodology**

The formula for attributing benchmark universe projected emissions follows the PCAF methodology:

$$\text{Benchmark Universe Attributed Projected Emissions} = \sum_i \frac{\text{Weight}_i \times \text{Portfolio value}}{\text{EVIC}_i} \times \text{Projected cumulative emissions}_i$$

Where **i** is a benchmark universe constituent.

Company		Specific portfolio value (e.g., 1 billion US\$)	Company Enterprise Value Including Cash (EVIC)	Projected cumulative emissions of the company by 2050
Company A	7%	70 million US\$	70 million / 50 billion US\$ = 0.14%	0.14% x 1,150 MtCO <sub>2e</sub> = 1.61 MtCO <sub>2e</sub>
Company B	5.8%	58 million US\$	58 million / 30 billion US\$ = 0.19%	0.19% x 9,250 MtCO <sub>2e</sub> = 17.58 MtCO <sub>2e</sub>
[Other companies with targets]	87.2% (total)	...	...	...

#### 4. Aggregate into a single benchmark universe trajectory based on cumulative emissions

Company	Benchmark universe weight	PCAF-attributed cumulative projected emissions
Company A	7%	1.61 MtCO <sub>2e</sub>
Company B	5.8%	17.58 MtCO <sub>2e</sub>
[Other companies]	87.2% (total)	76.39 MtCO <sub>2e</sub>

**Benchmark Universe Attributed Projected Emissions**

$$= \sum_i \frac{\text{Weight}_i \times \text{Portfolio value}}{\text{EVIC}_i} \times \text{Projected cumulative emissions}_i = 95.58 \text{ MtCO}_2\text{e}$$

Note: The aggregated projected emissions represent the aggregated projected cumulative emissions of all remaining companies including A and B.

This approach raises certain challenges that require careful methodological consideration:

- A portfolio ERP estimate might be decreasing mainly through portfolio allocation (and not real-world company decarbonization) due to the PCAF convention of assigning emissions ownership – whether ERP is strictly defined or using a relative benchmark like the approach presented here. An investor wanting to monitor the real-world impact of ERP over time may consider using an emissions attribution analysis framework, which in theory can identify which portion of portfolio-attributed projected emissions or benchmark-attributed projected emissions is linked to changes in company decarbonization plans (e.g., new decarbonization targets) as opposed to changes in portfolio allocation or other factors. This supplementary analysis may help to compare more accurately real-world emissions reductions of portfolios taking an ERP approach.
- The benchmark universe may evolve over time (e.g., changes in index weights or company coverage), which can bring volatility. If investors prefer a stable benchmark, the company weights could be kept stable at the level of a certain reference year (e.g., 2022). But some companies might drop from the benchmark universe (e.g., as a result of mergers or delisting). This would reduce the size of the benchmark universe. Given these issues, some investors may prefer a dynamic benchmark which, though perhaps more volatile, would also provide a more up-to-date reference universe.
- From the base year of the ERP assessment (2022 in the example) companies realize emissions that may not be in line with their initially stated decarbonization plans. This highlights the importance of accounting for realized ERP, as opposed to a purely forward-looking ERP. One way to do so is to keep a fixed time frame of assessment for the portfolio ERP (e.g., 2022-2050) and update the ERP from the base year (2022). This would require attributing realized emissions of both the portfolio and the benchmark universe (e.g., the actual 2023 and 2024 emissions instead of the initially projected emissions for these years). This computation accounts for ERP in a backward-looking way. Through an emissions attribution analysis, company realized decarbonization can be determined. Backward-looking ERP and forward-looking ERP could be summed into a single ERP over the fixed timeframe (e.g., 2022-2050).

For more information, please visit [gfanzero.com](http://gfanzero.com)