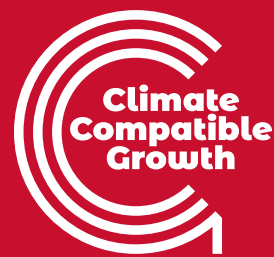




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# NET ZERO PORTFOLIO TARGETS FOR DEVELOPMENT FINANCE INSTITUTIONS: CHALLENGES AND SOLUTIONS

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## Acronyms and Abbreviations

<b>ADB</b>	Asian Development Bank	<b>GFANZ</b>	Glasgow Financial Alliance for Net Zero
<b>AfDB</b>	African Development Bank	<b>GHG</b>	Greenhouse Gas
<b>AIIB</b>	Asian Infrastructure Investment Bank	<b>ICP</b>	Internal carbon price
<b>BII</b>	British International Investment	<b>IDB</b>	Inter-American Development Bank
<b>CDP</b>	Climate Disclosure Project	<b>IFC</b>	International Finance Corporation
<b>CEB</b>	Council of Europe Development Bank	<b>IIGCC</b>	Institutional Investors Group on Climate Change
<b>CLICs</b>	Carbon lock-in curves	<b>IRR</b>	Internal rate of return
<b>CPI</b>	Climate Policy Initiative	<b>IsDB</b>	Islamic Development Bank
<b>DEG</b>	Deutsche Investitions- und Entwicklungsgesellschaft	<b>MDBs</b>	Multilateral Development Banks
<b>DFC</b>	US International Development Finance Corporation	<b>NDB</b>	New Development Bank
<b>DFI</b>	Development finance institution	<b>NDCs</b>	Nationally Determined Contributions
<b>EBRD</b>	European Bank for Reconstruction and Development	<b>NGFS</b>	(Central Banks' and Supervisors') Network for Greening the Financial System
<b>EIB</b>	European Investment Bank	<b>PCAF</b>	Partnership for Carbon Accounting Financials
<b>ESG</b>	Environment, Social and Governance	<b>SBTi</b>	Science-Based Target Initiative
<b>EU</b>	European Union	<b>SDG</b>	Sustainable Development Goal
<b>EU ETS</b>	European Emissions Trading System	<b>TPI</b>	Transition Pathway Initiative
<b>FMO</b>	Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden	<b>UNEP FI</b>	United Nations Environment Programme Finance Initiative



## Executive Summary

### Background to this paper

Development finance institutions (DFIs) have to align their activities with the objectives of the 2015 Paris Agreement. DFIs have responded by setting climate finance targets and by assessing Paris alignment at the transaction level. Some have adopted net zero portfolio targets (e.g., DEG and Finnfund).

- Net zero portfolios involve a decline in portfolio emissions over the next 30 years until projects with emissions are balanced by those that remove carbon from the atmosphere. Global coalitions such as the Glasgow Financial Alliance for Net Zero (GFANZ) expect public and private financial institutions to adopt such targets.
- We argue that net zero investment portfolio targets are the direction of travel for DFIs. To be credible, long-term net zero goals must be complemented by short-term targets that align with a 1.5°C emissions reduction trajectory.
- We discuss the practical challenges of net zero portfolio targets and offer potential solutions. The lessons are relevant to DFIs and other investors active in developing countries.

### Net zero portfolio targets: advantages and unintended consequences

- Unlike climate finance targets, which measure inputs, and operational guidelines, which are about processes and

principles, net zero portfolio targets are about the outcome of interest, namely lower emissions. Outcome targets are attractive because of this direct focus on the Paris objectives, because they incentivise emissions reductions across all sectors and investments and because they minimise the risk of greenwashing, provided emissions are accurately measured and reported.

- However, portfolio targets raise operational challenges. In the long term, development and climate objectives are well aligned; but in the short term there may be trade-offs related to investments in carbon-intensive sectors like infrastructure, manufacturing and agriculture. Such investments can alleviate poverty but could also lock in emissions if the underlying assets cannot be decarbonised.
- A net zero portfolio target also incentivises early divestment, which would result in carbon-intensive assets simply changing hands rather than being decarbonised. Incentive mechanisms are required to reward “transition projects”, which reduce emissions in high-carbon sectors or support low-carbon supply chains. A further concern is that DFI portfolios may turn over too slowly to accommodate a rapid decline in emissions.
- The summary box below reviews the main operational problems with portfolio targets and suggests potential solutions.



## Selecting an appropriate emissions pathway

**1 The concern:** Defining the right emissions pathway entails value judgements. Multiple emissions pathways are consistent with the Paris objectives, and views differ on how emissions reduction should be distributed across countries and sectors. DFIs require granular pathways that reflect their strategic priorities, that is, the countries and sectors they are active in. Their pathways must take into account the common but differentiated responsibilities of portfolio countries but also add-up to a Paris-aligned global pathway. The challenge is complicated by the fact that the emissions objectives of most portfolio countries (their Nationally Determined Contributions) are not yet fully Paris-aligned.

### Potential solutions

- **Bottom up pathways based on granular country-sector data:** The emissions pathways from global models can be downscaled to the country or sector level. Granular country-sector data can then be used to construct, bottom up, a DFI-specific portfolio-level emissions pathway that reflects its ex-ante strategic objectives (i.e., its expected commitment growth, portfolio structure and the contexts of the countries it operates in). Granularity does not reduce the need for value judgements, but it generates pathways that can closely match the development objectives of a DFI. Once the pathway is set, DFIs can make investment decisions in the usual way, knowing that the emissions target is aligned with their strategic priorities. Disclosure and knowledge exchange on how such pathways are constructed is essential given the inherent subjectivity of the exercise. The decarbonisation trajectories must also be consistent with the DFI's intended contribution to global net zero.
- **Climate-development win-wins:** The (perceived or real) dissonance between climate and development objectives can be reduced through the active pursuit of climate-development win-wins (for example, through investments in energy efficiency, ecosystems that support communities, and high-growth green sectors like renewable energy, green hydrogen, etc.). Emissions targets are not an accounting exercise; they are a strategic tool to shift the balance of investments towards those that are cleaner or can be decarbonised. They force an organisation to identify where to prioritise decarbonisation and how to target capital which is aligned with development.

## Dealing with inertia and lumpiness in the portfolio

**2 The concern:** DFIs provide patient capital. Their portfolios turn over slowly and often feature large carbon-intensive investments in infrastructure and sectors that are hard to decarbonise. Meeting a net zero portfolio target in the presence of slow and lumpy projects is challenging unless additional flexibility can be provided.

### Potential solutions

- **"When" flexibility through multi-year carbon budgets:** Multi-year carbon budgets provide some flexibility to allocate carbon space across time. This reduces the effect of slow portfolio turnover and may help with high-carbon projects that cannot become less emissions-intensive immediately, but could feasibly do so over the longer term. However, budget periods that are too long raise concerns about intertemporal credibility (i.e., when the time comes targets may not be honoured). To reduce moral hazard, budget periods should be relative short, perhaps to coincide with DFI's strategy cycle. Five-year carbon budgets have been adopted at a national level by the UK and reflect the "stock take" cycle under the Paris Agreement.
- **"Where" flexibility through the sharing of carbon space with institutions that have similar net zero targets:** Large projects typically require co-financing for risk management reasons. Emissions attribution rules are emerging that assign carbon emissions pro rata to financial contributions. That is, the emissions of large projects are allocated automatically across participating financial institutions, reducing the portfolio impact on individual DFIs. The need to share carbon space, as well as financial risks, could thus create an additional impetus for collaboration between DFIs. An important prerequisite is that participating DFIs must have similar net zero targets to prevent the leakage of emissions to less ambitious institutions.
- **Safeguards against carbon avoidance structures:** There is a risk that the carbon impact of large projects is reduced through creative financing structures to ringfence the carbon footprint. Clear guidelines need to be established to ensure financing structures are driven by the requirements of the project, rather than carbon accounting rules. This monitoring challenge is not dissimilar to what authorities already need to undertake to police tax avoidance.

Incentivising transition projects	Managing trade-offs with development objectives
<p><b>3 The concern:</b> Portfolio targets incentivise inherently clean projects over so-called transition projects. Transition projects are interventions in high-carbon sectors with a view to decarbonise them, and they include emissive projects that are important for low-carbon supply chains, whose carbon benefits are indirect (for example, port facilities for offshore wind). Both types of transition projects, high-carbon and supply chain projects, are essential for net zero and need to be rewarded.</p> <p><b>Potential solutions</b></p> <ul style="list-style-type: none"> <li>■ <b>Future emissions accounting:</b> To reward emissions reduction in high-carbon sectors, projects with high decarbonisation potential could enter the carbon account based on the expected carbon intensity at the end of the project (thus discounting temporarily higher emissions whilst the project decarbonises). Initially, these would be projected emissions (based on planned decarbonisation measures), but they would be replaced by actual emissions when the project ends. This forward-looking approach rewards, and creates an incentive for, future emissions reductions, but it poses risks if decarbonisation plans are uncertain. If the expected emissions cuts do not materialise, the higher actual emissions will enter the carbon account. DFIs could establish a provisioning system for carbon emissions (similar to bad debt provisioning) to prepare for this eventuality.</li> <li>■ <b>Transition credits for projects with strong carbon benefits:</b> To reward transition projects with either high emission reductions or supply chain benefits, DFIs could introduce a system of “transition credits”, which would offer a discount on project emissions. In the case of supply chain projects, the credit would be in proportion to the expected indirect carbon benefit of an intervention. In the case of high-carbon projects, it would be proportional to the expected decarbonisation benefits, boosting the incentive already provided through future emissions accounting.</li> <li>■ <b>Standards against greenwashing:</b> The added incentives from future emissions accounting and transition credits increase the risk of greenwashing. DFIs will need to follow auditable rules and established performance standards for their use to mitigate this risk (for example, by leveraging the EU’s taxonomy of what counts as a transition activity and updating this regularly to reflect current conditions).</li> </ul>	<p><b>4 The concern:</b> Whilst in the long term climate action and sustainable development are well aligned, there may be acute short-term trade-offs to navigate. Net zero portfolio targets will likely not reduce DFIs’ total investment but will shift the composition of activities. This will create winners (investment areas with enhanced scope) and losers (investment areas with reduced scope).</p> <p><b>Potential solutions</b></p> <ul style="list-style-type: none"> <li>■ <b>No special treatment for high-development projects.</b> It is tempting to make allowances for high-development projects, for example in the form of a “development credit”. In practice, this would make it easy for DFIs to avoid the carbon constraint and open the door to greenwashing. Instead, climate-development trade-offs should be addressed by choosing an emissions pathway that reflects common but differentiated responsibilities, and recognises the development need for some emissive projects. Once an appropriate pathway is defined, projects need to justify the carbon space they require.</li> <li>■ <b>Internal carbon price:</b> A shadow price of carbon that is consistent with the chosen emissions pathway can help inform climate-development trade-offs. It allows an explicit comparison of the carbon costs and development benefits of a project. Shadow pricing is particularly suitable in organisations that calculate social returns on investment in addition to financial returns. If the benefits of a project far outweigh its costs after accounting for the carbon price, then space should be made for it. An internal carbon price that is aligned with the emissions pathway thus helps to prioritise the most impactful projects which deserve carbon space.</li> </ul>

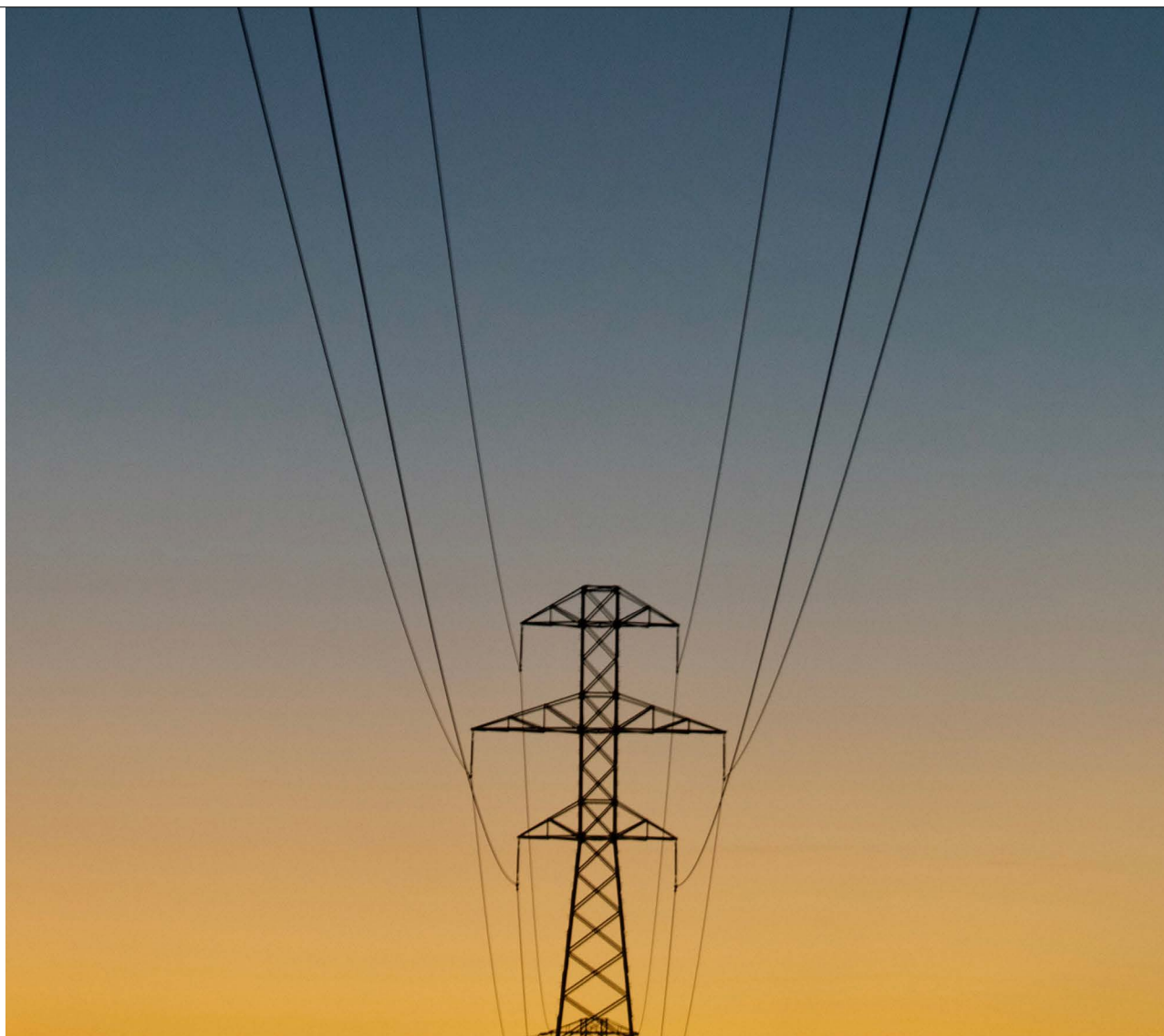
## Accounting for emissions after a project ends

**5 The concern:** Portfolio targets encourage early exits and shorter loan tenors to time-limit the carbon impact on the portfolio. However, exits reassign rather than reduce emissions. There is no impact on the real economy. Whilst projects are removed from the portfolio on exit, emission reductions in the real economy must continue. Net zero portfolio targets should be complemented by information about emissions after a project ends.

### Potential solutions

- **Monitoring the emissions of completed projects:**  
DFIs and their clients should commit to continue reporting emissions beyond project-end, taking

advantage of the monitoring systems that were put in place during the project. The reporting of post-completion emissions would be a separate, perhaps less frequent process and happen outside the formal portfolio target. It would encourage responsible exits (to investors committed to net zero) and increase the likelihood that emissions management continues. Whilst the commitment would be difficult to enforce legally, carbon reporting requirements are fast evolving (e.g., through the International Sustainability Standards Board) and the public reporting of carbon performance is becoming increasingly standard. Environmental lawyers are also exploring the legal feasibility of exit covenants on carbon performance (for equity investments only).





# Glossary of Key Terms

## **Asset class**

A categorisation for an investment type that holds similar attributes and regulations (e.g., equities, fixed income, cash, commodities and so on).

## **Asset stranding**

The risk that an already made investment suffers from premature and/or unexpected devaluations, losses or liabilities due to market and regulatory changes brought by climate policy (Saygin et al., 2019).

## **Carbon price / shadow price**

A price added to a project/product to internalise the cost of carbon emissions, wherein shadow price is a type of hypothetical price estimate attached to each tonne of carbon emissions (CDP, 2021).

## **Carbon space / carbon budget**

The amount of carbon emissions that a Development Finance Institution (DFI) can emit over a given time period and up until their net zero target.

## **Climate finance**

Finance from public, private or financial intermediaries that support climate mitigation and/or adaptation projects in the forms of debt, equity and/or grants (CPI, 2021).

## **Common but differentiated responsibilities**

A principle referring to the duty placed on all countries to mitigate climate change, whilst recognising that countries have different circumstances, capacities and historical responsibilities.

## **Emissions boundary**

A boundary of the emissions included in a financial institution's net zero target and resulting carbon budget.

## **Emissive projects**

Projects that emit greenhouse gases or have associated.

## **Future emissions accounting**

An emissions accounting system assigning carbon space to a project by using the expected carbon intensity at project end, allowing for a short-term rise in project emissions but medium- and long-term verifiable emission reductions in portfolio emissions. Future emissions accounting aims to incentivise investors to clean up projects rather than divest.

## **Greenwashing**

When an investor misleads the extent to which decarbonisation efforts are made in the investment portfolio and/or feasibility of future climate commitments. Misleading includes misinformation, insufficient climate alignment and hidden trade-offs.

## **Indirect carbon benefits**

The supplementary benefits of an emissive project that can be indirectly accounted for.

## **Intertemporal credibility / time inconsistency**

Intertemporal credibility is an interpretation of plans and commitments as credible in their effort to decarbonise an investment portfolio in the future. The opposite might occur and can be described as time inconsistent.

## Glossary of Key Terms (cont.)

### **Net zero investment portfolio**

An investment portfolio where the sum of all projects with emissions is equalled to the projects removing carbon from the atmosphere.

### **Patient capital**

A long-term capital investment where an investor is “patient” and does not seek short-term returns.

### **Scope 1, 2 and 3 emissions**

The direct emissions of a business operation (Scope 1) and the indirect emissions associated with its electricity consumption (Scope 2). Indirect upstream emissions embedded in the supply chain of a company or downstream in the products it sells (Scope 3). The portfolio emissions of a financial institution are technically Scope 3 emissions.

### **Transition credits**

An awarded carbon discount (“credit”) on actual project emissions if a project qualifies as transition finance with indirect carbon benefits.

### **Transition projects/transition finance**

Projects with high-carbon activities that are necessary or a part of a net zero transition and increase investment portfolio emissions in the short-run, conditional on medium- and long-run decarbonisation. Transition finance means investments in such projects (BII, 2022).

### **Social return on investment**

An outcome-based calculation method that incorporates social and environmental values when evaluating an investment project.







# 1 Introduction

**This think-piece aims to understand barriers and identify potential solutions to the adoption of net zero portfolio targets for development finance institutions (DFIs).**

Bilateral finance institutions and multilateral development banks (collectively referred to as DFIs) are under pressure to align their activities with the 2015 Paris Agreement. Article 2.1c of the Agreement calls for the alignment of financial flows with the objective of low-carbon, climate resilient development. There is an expectation, expressed by global coalitions such as the Glasgow Financial Alliance for Net Zero (GFANZ), that this will in due course entail a net zero emissions target for their project portfolios. This paper explores the practical implications of such a target. Whilst the emphasis is on DFIs, the lessons are relevant to all financial portfolios, particularly impact investors that are active in developing countries.

**Net zero is essential for stabilising the world's temperatures.** Global mean temperatures will keep rising as long as there is a positive flow of emissions, which is not balanced by an equivalent removal of carbon from the atmosphere (Fankhauser et al., 2022). To reach net zero emissions by the middle of the century, the objective of the Paris Agreement,

global emissions need to peak within a few years and fall rapidly thereafter. This is now well recognised. Governments around the world, including in developing countries, have committed to reaching net zero emissions by 2050 or soon after. They account for 80% of the global population and 90% of world GDP (Net Zero Tracker, 2022).

**Given the widespread commitment to net zero, DFIs have to find ways to make their project portfolios net zero compatible whilst meeting their development objectives.** DFIs are committed to delivering on the Sustainable Development Goals (SDGs). It is a core objective. Meeting the SDGs requires highly integrated policies to mitigate the risk of constraining, counteracting and cancelling effects of interrelated SDGs (Nilsson et al., 2016). The pursuit of net zero emissions is a case in point. Climate change is one of the most critical goals, partly synergistic and, at least in the short term, partly in conflict with other development goals.

**Meeting urgent development needs requires some emissive investments, but unconstrained support for high-carbon projects is risky.** Developing countries are amongst the most vulnerable to the impacts

*“Development Finance Institutions have to find ways to make their project portfolios net zero compatible whilst meeting their development objectives”*



of climate change (World Bank, 2013). There is a strong possibility of asset stranding (Caldecott 2015, 2021; van der Ploeg and Rezai, 2020; Saygin et al., 2019), which engenders financial stability risks and could undermine development progress. DFIs also face reputation risks and possible legal liabilities, which are likely to grow over time (Covington et al., 2016; Setzer et al., 2022). Therefore, there is a clear need for DFIs to deliver on their mission of achieving the SDGs whilst assisting countries to transition into climate resilient and net zero economies.

**DFIs have responded to this challenge with a combination of financial targets and operational adjustments.** Practically all DFIs have set climate finance targets, which respond to the climate finance commitments of rich countries under the UN Framework Convention on Climate Change. Large DFIs, like EIB and IFC, have introduced an internal carbon price

to guide lending and investment decisions. The main multilateral development banks have collaborated on frameworks with operational principles, including an assessment framework for direct investment operations in mitigation, adaptation and climate resilience (MDB, 2021a), which aligns their activities with the Paris Agreement. Only a handful of DFIs, including BII, FMO, DEG and DFC<sup>1</sup>, have set net zero targets on their investment portfolios.

**The adoption of net zero portfolio targets is the logical next step in the climate strategies of DFIs.** They are attractive because they align directly with the objectives of the Paris Agreement. Unlike climate finance targets (which measure inputs) and investment principles (which guide operational processes), net zero portfolio targets monitor and measure the outcome that ultimately matters, lower emissions. However, net zero portfolio targets raise important operational problems, which need to be overcome before they become a practical option.

**With this brief, we hope to advance the debate on portfolio targets.** We unpack the main reservations about net zero targets and put forward potential solutions. Our approach was informed by the academic and practical literature on the subject, as well as discussions with selected experts<sup>2</sup>. Our suggestions will need further analysis and operational testing, but we hope that the paper can move DFIs further in their approach to net zero.

<sup>1</sup> See the list of *Acronyms and Abbreviations* at the top.

<sup>2</sup> We conducted five semi-structured interviews with senior sector experts from development finance, development economics and the financial sectors. To support key findings, anonymous quotes are inserted throughout the text. These quotes are labelled I1 to I4 for each interviewee. A risk and ethics assessment following the Medical Sciences Interdivisional Research Ethics Committee at the University of Oxford was completed and approved with reference: R74082/RE001.





# 2 Development finance and net zero emissions

## The Emergence of Net Zero

**DFIs are exposed to the climate debate from two different, but related directions. As financial institutions, they are expected to follow the growing trend in the sector to better manage climate risks and re-align financial flows towards net zero.** The financial sector is increasingly embracing climate change objectives. Net zero alliances and networks are emerging from within the sector, many of which have grown rapidly in recent years (see IIGCC, 2022; Climate Action 100+, n.d.). Most notable is the Glasgow Financial Alliance for Net Zero (GFANZ), a coalition of seven financial sector alliances committing to net zero by 2050 with over 550 members (GFANZ, 2022a).

**Net zero alliances require their members to gradually reduce the greenhouse gas (GHG) emissions linked to their portfolios.** This often encourages the adoption of transition pathways, methodologies for estimating and accounting for GHG emissions (e.g., GFANZ, 2022b), and updating internal disclosure and governance structures (e.g., UNEP FI, 2021; IIGCC, 2021). Internal operational changes and measurement benchmarks are also incorporated to convert high-level targets into actionable short- and

medium-term goals, frequently following recommendations from standard-setters such as the Science-Based Target Initiative (SBTi). These measures are consistently scrutinised on the grounds of integrity, adequacy and transparency. Yet, and quite noteworthy, several large-capital members have exited GFANZ or expressed discontent due to new requirements on fossil fuel phase-down and resource-heavy processes in reporting and governance (Ellmen, 2022).

**As development agencies, DFIs are under pressure to deliver on the SDGs.** This requires a rapid increase in investments. Yet, a recent review shows higher investment gaps than anticipated across all SDGs (Kulkarni et al., 2022). The largest investment gaps are present in SDG 13 on climate action. Recently published estimates on mitigation finance indicate that around \$3.4 trillion a year is required globally between 2020 to 2025 (Rockefeller Foundation and BCG, 2022) whilst the Climate Policy Initiative (CPI) reports mitigation finance in 2019/2020 to be around \$570 billion (CPI, 2021). CPI further reports that even though global finance approximately doubled in the last decade, the cumulative amount was only \$4.8 trillion (CPI, 2022), showcasing the unparalleled need for rapid acceleration in per annum financing.



Whilst DFIs are historically driven by development objectives, there is a new discourse that climate and development objectives need to be synergistic in investment commitments. This includes efforts such as incorporating climate-related risks and climate-opportunities in their investment decisions. Various DFIs have reported goals for full Paris alignment in their financial activities and operations. At the transaction (as opposed to portfolio) level, this includes IFC by July 2025 (IFC, 2022) and EBRD by the start of 2023 (Bennet, 2021). In addition to net zero targets, several DFIs have progressed to developing dedicated climate strategies, for instance the climate action plans of FMO (2022) and DFC (2021).

**We group the different climate-compatible approaches of DFIs into three waves of action.** DFIs have responded to the climate emergency by (i) setting climate finance targets, (ii) adjusting operational practices and guidelines and (iii) adopting net zero targets.

## Climate Finance Targets

**The first wave of action was setting and committing to climate finance targets.** This can be described as a “low hanging fruit” to which most DFIs have committed. These climate targets are inputs in the global investment flows, rather than outcome targets, either as an absolute investment target or expressed in percentage terms of total investments. For instance, AfDB committed to 40% of all investment approvals by 2025 to be earmarked for climate finance (AfDB, 2022). **Table 1** provides an overview of climate finance targets for selected DFIs.

**Amongst DFIs, the multilateral development banks have coordinated their approach to climate finance.** Ten of the largest MDBs<sup>1</sup> have issued a *Joint Report on Climate Finance*, complemented by their *Common Principles*

	Absolute target	Percentage target
IFC*	-	35% over FY2021–25
EBRD	-	>50% by FY2025
EIB	€1tn from FY2021–2030	50% by FY2025
IDB	-	≥30% over FY2020–2023
IsDB	-	35% by FY2025
ADB	\$100bn from FY2019–2030	-
AfDB	\$25bn from FY2020–25	40% by FY2025
AIIB	Cumulative \$50bn by FY2030	50% by FY2025
FinDev Canada	-	35% by FY2025
Finnfund	€1bn by FY2030	50% of private capital by FY2030

**Table 1. Climate Finance Targets: Selected DFIs**

**Note.** This is not an exhaustive list. The reported climate finance targets cover both adaptation and mitigation finance. \*IFC is covered by the World Bank Group’s commitments. Source: AfDB (2022), Finnfund (2021) and MDB (2021b). See list of *Acronyms and Abbreviations* at the beginning of paper.

for *Climate Mitigation Finance Tracking* (MDB, 2021c). A recent joint statement at COP27 reports that their combined climate commitments have delivered \$51 billion of climate investments in Low and Middle-Income Countries and \$31 billion in High-Income Countries (MDB, 2022).

**However, DFIs have recognised that finance targets alone are not enough.** Substantial financing gaps remain (CPI, 2022), and the narrow focus on climate finance has reduced pressure to reduce emissions in the rest of the portfolio. There is a “*disproportionate focus on the input targets*” [1] as one interviewee points out. The definition of success has to be broadened from finance input to emissions reduction in the real economy. The climate commitments of DFIs therefore evolved into a second wave of action.

<sup>1</sup> The ten MDBs are IFC, EBRD, EIB, IDB, IsDB, ADB, AfDB, AIIB, NDB and CEB. See list of *Acronyms and Abbreviations* for full names.



## Operational Practices and Guidelines

The second wave of action was to adopt operational practices and guidelines that align DFIs activities with the Paris Agreement. They can best be described as “soft rules” for how DFIs should decarbonise their investment portfolios. As one interviewee explained, they are often preferred over introducing “hard rules upfront” as “you spend a lot of time, discussing the hard rules and sometimes they actually change over time” [13]. Unlike climate finance targets, which are easy to ascertain once transparent reporting rules are defined, the operational practices and principles for Paris alignment represent a more complex story. However, this appears to be the current wave of action for the majority of DFIs.

Both bilateral and multilateral DFIs are developing and adopting investment principles across their operations. Examples include BII’s framework for assessing Paris alignment in natural gas power plants projects (BII, 2020a) and Swedfund’s climate lens guide in performance standards assessments (Swedfund, 2021). All DFIs have environmental, social and governance (ESG) frameworks, green bond standards and SDG or climate-environment strategies.

Perhaps the most notable frameworks for operational practices and guidelines are the MDB’s jointly developed principles and building blocks. Alongside their joint commitments in climate finance targets, as noted above, the MDBs have co-developed the *Just Transition High-Level Principles*, as announced at COP26 in Glasgow (MDB, 2021d), and six building blocks for Paris Alignment (MDB, 2021a). In other words, the MDB members have applied common methodologies across their operations, covering issues such as criteria for GHG emissions reduction, resilience building, climate risks and sector-specific guidance (IFC, 2022). The six building blocks and corresponding common best practices are expected

“The experience with operational guidelines to date suggests that to adhere to a global carbon budget and reach net zero, Development Finance Institutions will ultimately have to move towards outcome indicators.”



to result in full Paris Alignment amongst MDBs, specified to be achieved between 2020 and 2025 depending on individual ambition of the institution.

**Operational practices and guidelines function at the level of individual investments.** They do not speak to the Paris alignment of the portfolio as a whole. As one interviewee highlights: “The problem with [guidelines is] that the emissions footprint of any one project is always so small in the context of countries’ emissions that you can make almost any project consistent with Paris if you assume various other things about what’s happening elsewhere in the economy” [11].

**To guide their investment decisions, some DFIs have adopted internal carbon prices (ICPs; Table 2).** As an operational practice, ICPs are voluntary price commitments commonly adopted with hypothetical (shadow) prices and have become widespread practice amongst private sector

investors (CDP, 2021). Note that this practice is so far only adopted by institutions who conduct economic cost-benefit analyses (e.g., the MDBs). DFIs use ICPs as a guiding framework rather than an investment cut-off. As one interviewee explains, the carbon price test *“didn't necessarily mean that the project would be rejected if its carbon price adjusted IRR fell below some threshold, but it was a factor in the decision making”* [I2].

**The impact of carbon pricing on investment decisions seems to be limited.** Interviewee [I2] notes that only a small number (less than 5%) of investment projects became *“questionable”* as a result of applying a carbon price to the internal rate of return (IRR). **Table 2** suggests that this may be linked to the adoption of relatively low intermediate carbon prices, compared to what net zero requires (NGFS, 2022). The longer-term carbon prices in institutions like ADB and EBRD also fall below the estimated levels needed for net zero, suggesting that the impact of internal carbon pricing could remain limited.

**The experience with operational guidelines to date suggests that to adhere to a global carbon budget and reach net zero, DFIs will ultimately have to move towards outcome indicators.** This means committing to net zero on their financed emissions as opposed to Paris Alignment and operational guidelines. It is the third wave of climate action, towards which DFIs are slowly evolving.

## Net Zero Targets

**The last and third wave of action is for DFIs to adopt net zero portfolio standards and targets.** A target for financed emissions ensures that DFIs account for the emissions performance of their investee companies and financed projects (Scope 3) in decarbonisation and Paris alignment strategies. The accounting can cover the direct lending and equity portfolios, as well as intermediated lending and equity funds, of DFIs and will likely result in

	Intermediate targets	2050
IFC	Unspecified price level	Unspecified price level
EBRD	\$50–100/tCO <sub>2</sub> e in 2030	increase by 2.25% per year ≈ \$78–156/tCO <sub>2</sub> e
EIB*	\$270/tCO <sub>2</sub> e in 2030	\$868/t
ADB	\$43.2/tCO <sub>2</sub> e	increase by 2% per year ≈ \$78/tCO <sub>2</sub> e

**Table 2. Internal Carbon Prices**

**Note.** \*original valuation for EIB was in euros (€) and thus USD (\$) are estimates. All reported carbon prices are shadow prices and are often restricted to certain asset classes or project sizes/industries. This context is excluded for simplicity. Other DFIs have not reported the use of carbon prices in publicly available resources. Sources: IFC (2022), EBRD (2019), EIB (2020) and ADB (2021). See list of *Acronyms and Abbreviations*.

the implementation of a portfolio-level carbon constraint. This approach is often consistent with the adoption of science-based targets (see SBTi, 2021) and transition pathways (see TPI, 2022) for net zero roadmaps, criteria and standards accountability. These frameworks are increasingly adopted in the private sector (Net Zero Tracker, 2022); putting pressure on DFIs to follow suit.

**In recent years, a vanguard of DFIs has started committing their investment portfolios to net zero** (see **Table 3**). One prominent example is Finnfund, which has already presented a net negative carbon balance in their investment portfolio, mainly due to investments in afforestation (Finnfund, 2021). It is important to note that their 2050 target (**Table 3**) is complemented by a commitment to align each investment to a country/sector net zero pathway, which is a stricter interpretation of a net zero portfolio. As noted above, the MDBs have not emulated these net zero commitments, in part because of their multilateral shareholdings. As one interviewee explained, MDBs have a strong *“culture that is client driven”* which *“makes it very hard to put a net zero strategic frame”* [I2]. In other words, it might be politically and culturally difficult to pursue acceptance of portfolio targets amongst the MDB shareholders.



	Net zero targets
BII	2050
DEG	2040
Swedfund	2045
Finnfund	2050*
DFC	2040
FMO	2050

**Table 3. Example DFI's Net Zero Targets**

**Note.** \*reflects each investment being Paris-aligned and complying with a country/sector net zero pathway. This table is not an exhaustive list. Institutions included are all private sector DFIs. MDBs have not committed to net zero investment portfolio targets. See list of *Acronyms and Abbreviations* at the beginning of report. Sources: BII (2020b), DEG (2022), Swedfund (2021), Finnfund (2022), DFC (2021) and FMO (2022).

**The move to net zero targets is helped by the introduction of new accounting rules about emissions boundaries and attribution.** Net zero portfolio targets require clear rules to define which assets and emissions are included in the target and how project emissions are attributed to different funders. The extent of the “emissions boundary” (e.g., the inclusion of Scope 3 emissions) is an indication of the responsibility DFIs are willing to take for the emissions they are associated with. Attribution defines how this responsibility is shared. Important guidance is starting to emerge on how these questions may be answered. Institutions such as SBTi and PCAF have published guidance on which assets should be included in a net zero portfolio target (SBTi, 2021; PCAF, 2022). Clarity about accounting rules moves the adoption of net zero targets an important step forward.

**The advantage of a net zero portfolio target is that it creates predictability, credibility and transparency.** Portfolio targets create predictability by ensuring that project managers and the market can foresee and plan for available financing and standards in future project developments. They enhance environmental credibility as they are directly compatible with global net zero and require the stable transfer of finance from high to low carbon. They also safeguard against and limit the prospect of greenwashing practices. In terms of transparency, portfolio targets, complemented by entity or sector-level information from tools like SBTi, make it easier to assess the climate

performance of individual projects and the DFI as a whole. Tools to help portfolios align with the Paris Agreement are emerging, that is, new computational models that can estimate global carbon budgets by sector and geography (Doshi et al, 2021). Note that these granular carbon budgets should be flexible and updated to include new technologies that reduce GHGs, thus limiting the bias towards ‘old’ categorisations of sector/geography project investment advantages.

**Net zero targets are about strategy and culture, not just emissions accounting.** The advantage of changing the investment culture, that is both *how* one assesses the impacts of high emissive projects and the *acceptance* of new processes, should not be underestimated. This is not solely an investment process but also a cultural mindset enabling the shift towards incorporating synergistic thinking on climate and development. Net zero investment portfolios will thus not solely lead to emissions reduction, but arguably they will create a new discourse in what constitutes responsible investments.

**Whilst advantages of net zero portfolio targets are powerful, the short-term challenges should not be overlooked.** The main concern of DFIs is that a stringent GHG emissions constraint is too rigid and would limit their ability to respond to urgent development needs. This, coupled with the relative historical precedence of risk-aversion amongst DFIs, is prohibiting necessary investments into new technologies and low-carbon transition in development countries. These issues are perceived by some as the “*the big elephant in the room*” [14]. One interviewee stated that “*DFIs need to be taking more risk*” and that meeting climate change and development objectives cannot be solved unless “*you have got targets to focus minds and force the conversations about the hard choices*” [14]. The rest of the paper unpacks this general unease and identifies the specific issues which must be resolved before a net zero portfolio target becomes practicable.



# 3 Making net zero portfolio targets work

**In this section, we discuss possible solutions to the most salient concerns raised around net zero portfolio targets.** We identify five concerns, which are directly linked to the move to net zero portfolio targets. We do not cover generic issues in carbon management, such as emissions monitoring and carbon accounting, which are common to all carbon management approaches.

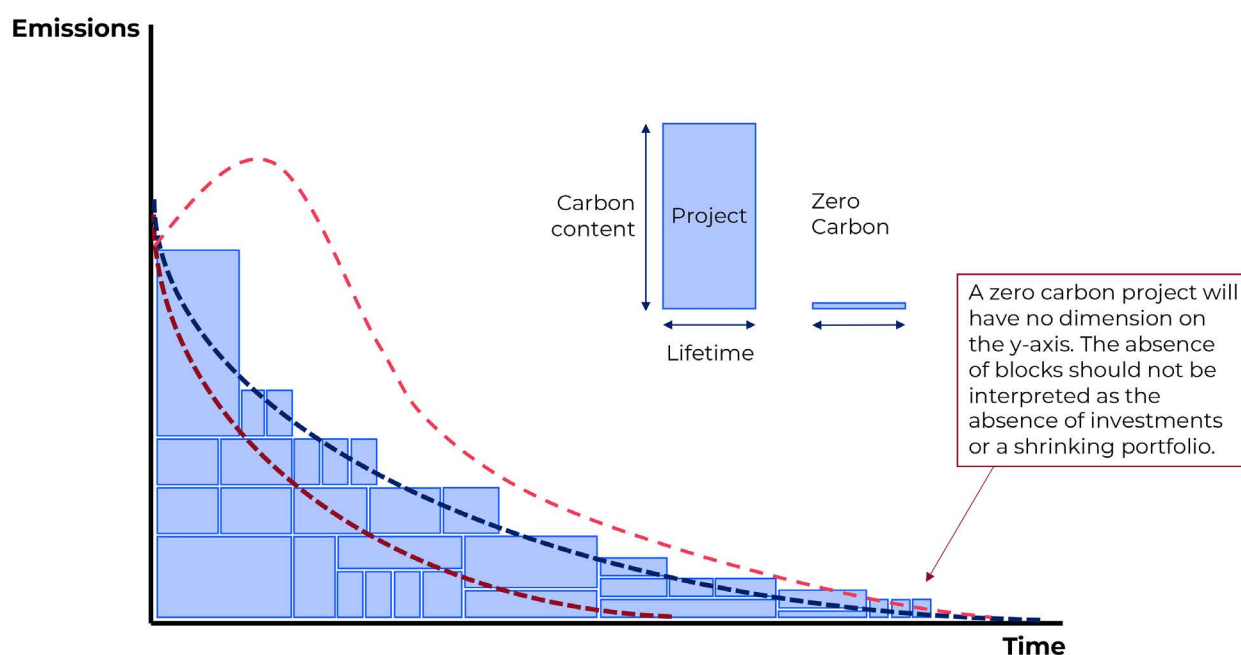
## Selecting an Appropriate Emissions Pathway

**Multiple emissions pathways are consistent with targets to decarbonise; this introduces subjectivity regarding what pathway a DFI should adopt.** The first challenge in setting a net zero portfolio target is choosing an appropriate emissions reduction trajectory. There are many modelled pathways to choose from, with different assumptions about global burden sharing, technology developments and other parameters. The chosen trajectory will have to be consistent with global objectives, cognisant of the development context of the countries a DFI is operating in, and compatible with scientific views on what is feasible. **Figure 1** shows schematically how different pathways may affect the portfolio. Note, the shape of these curves

varies because of the inherent subjectivity in how emissions reduction should be distributed.

**DFIs need emissions pathways that reflect their strategic priorities, growth plans and the development context they operate in.** As one interviewee explained, *“the decarbonization path of a particular sector in a particular country is not going to be homogeneous”* [13]. This granularity in strategy and context is not available from global energy–economy models. However, it should be possible analytically to downscale credible global models to the country or country-sector level. Downscaled scenarios already exist for industrialised countries (NGFS, 2022). DFIs should invest in this evidence by commissioning downscaled country-sector data from credible global models. This could perhaps be done jointly by a group of DFIs to ensure consistency and exploit economies of scale. As an example, assume that a DFI invests in just two countries, which have 2030 emissions reduction targets of 80% and 60%, respectively. If the DFI expects to invest in both countries in equal measure, its portfolio target is 70% ( i.e.,  $0.5 \times 80 + 0.5 \times 60$ ). If the DFI expects to invest 25% in the first country and 75% in the second, its portfolio target would be 65% (i.e.,  $0.25 \times 80 + 0.75 \times 60$ ).





**Figure 1.** Schematic of the impact of different emissions pathways on loan and investment portfolios

**Note.** The figure shows how different emissions pathways (dotted lines) constrain portfolio emissions. Portfolio emissions are the sum of project emissions. Each project is represented by a block, the height of which reflects annual emissions and the width represents project duration. Note that zero-emissions projects are not visible in the chart (they have zero height), although they will become the majority of investments as time passes.

**Based on granular country or sector-level data, DFIs can construct, bottom up, an organisation-specific emissions pathway.** For example, the pathway would reflect the anticipated sector composition in the portfolio, with steeper emissions paths in sectors where zero-carbon solutions are breaking through. It would make allowances for portfolio expansion and new strategic directions (for example a scale-up of transition projects). It would also reflect the common but differentiated responsibilities of portfolio countries. This granular exercise does not reduce the need for value judgements, but it generates organisation-level pathways that should match the development objectives of DFIs. Once the pathway is set, DFIs will make investment decisions in the usual way. This means actual investments will deviate from ex ante expectations, but those investments and the portfolio target will both be based on the same strategic priorities.

**Emissions pathways will have to balance the ambitions of their portfolio countries and the requirements of global net zero.** Developing countries will decarbonise more slowly than the global average. There are no expectations that they will follow the global emissions path. However, reducing emissions in a Paris-aligned way is not only the direct remit of SDG 13, it also supports the 16 remaining goals, given the synergies between climate action, poverty alleviation and economic development. Finding the right balance is made more difficult by the fact that the net zero ambitions of many portfolio countries (their Nationally Determined Contributions, NDCs) are not fully Paris-aligned (Climate Action Tracker, 2023) and frequently not consistent with domestic legislation (Nachmany and Mangan, 2018). Toolkits, such as carbon lock-in curves (CLICs), can help to estimate the carbon budget implications of different investment strategies (Caldecott et al., 2018).

**The emissions pathways should be subject to scrutiny by external experts and open to periodic review.** Disclosure and knowledge exchange on how such pathways are constructed is essential given the inherent subjectivity of the exercise. Periodic reviews, for example after each strategy period, can ensure that the pathway remains consistent with the strategic direction of the DFI and the climate ambitions of its portfolio countries, whilst remaining Paris-aligned on aggregate.

**DFIs can reduce the tension between global pathways and NDCs through investment strategies that promote climate finance, climate-development win-wins and negative emissions.** Emissions targets are not an accounting exercise, but a strategic tool to shift the balance of investments towards those that are zero carbon or can be decarbonised. They force an organisation to identify where to prioritise decarbonisation and how to target capital which is aligned with development. DFIs can reduce the gap between global pathways and NDCs through the deliberate pursuit of climate and development win-wins. This is particularly true for competing interests between poverty eradication and meeting net zero targets. One interviewee [13] describes this as a “*difficulty of goal definition*” and elaborates: “*as you go across the [organisation], they say our mandate is not just net zero, our mandate is about poverty reduction. Then the question becomes how do you integrate the notion of net zero in there*”.

**The investible universe for DFIs, and the scope for development impact, will not be smaller, but different with net zero portfolio targets.** Emissions can often be reduced at very low or even negative costs, for example through energy conservation or land rehabilitation. Another option is investing in sectors that help build international

competitiveness in growing green industries (Hepburn and Ward, 2011; Ward et al., 2012; Fankhauser et al., 2020). Development projects can result in co-benefits for environmental protection and net negative emissions. Examples include mangrove restoration that improves the productivity of fisheries and provides hazard defence or the investment in degraded lands to enhance agricultural productivity, which improves carbon sinks.

## Dealing with Inertia and Lumpiness in the Portfolio

**The decarbonisation rate of a portfolio depends on the speed at which projects turn over and the rate at which zero-carbon solutions are introduced.** Table 4 illustrates this in a stylised example. The table calculates the year in which the emissions of a hypothetical portfolio are reduced by half as a function of portfolio turnover and the rate at which zero-carbon solutions are introduced. Reaching the 50% benchmark is delayed if investments are held longer (the portfolio turns over more slowly) and if the share

Holding period (yrs)	Share of clean in new projects				
	20%	30%	40%	50%	60%
6	2038	2033	2031	2029	2028
8	2043	2036	2033	2031	2030
10	2048	2040	2036	2033	2031
12	2053	2043	2038	2035	2033
14	2058	2046	2041	2037	2035

**Table 4.** Year when a hypothetical portfolio is decarbonised by 50%

**Note.** We assume a steady state portfolio with no growth (with growth, the 50% benchmark would be reached later) and no emissions reductions in the portfolio itself (with abatement of portfolio emissions the benchmark would be reached earlier). Emissions,  $E$ , in year 1 are the sum of emissions in year 0 minus exits  $X$  plus investments  $I$ . Over a period of  $t$  years, this means  $E(t) = E(0) + t(I - X)$ . If projects are held for  $H$  years, a fraction  $1/H$  of the portfolio is turned over per year. If a share  $c$  of the new projects is zero carbon, we have  $E(t)/E(0) = 1 - tc/H$ .

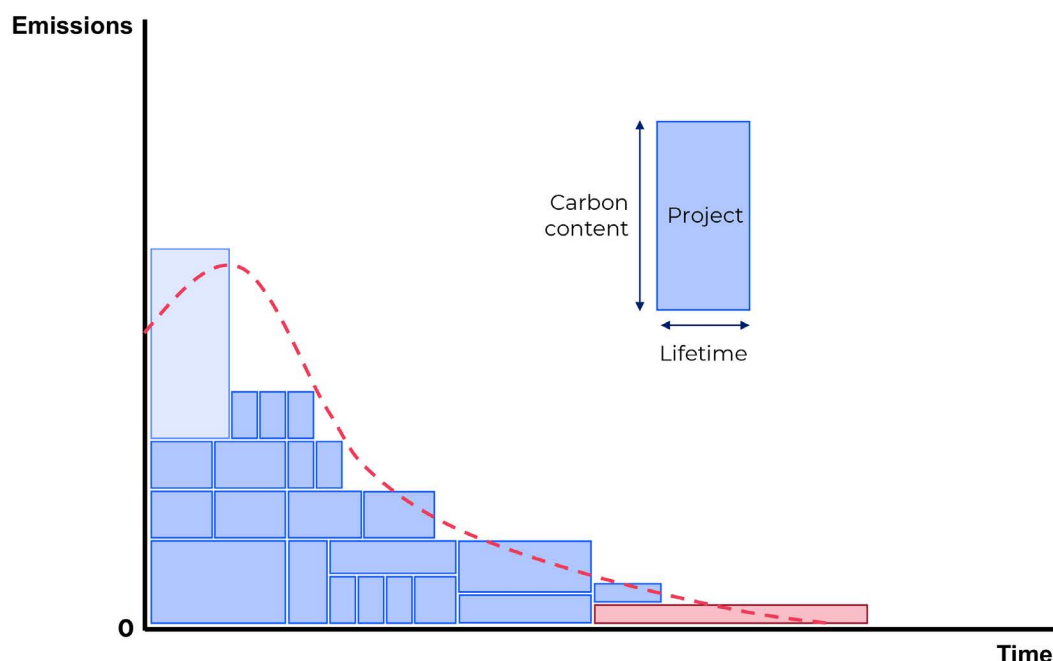


of zero-carbon projects is smaller. The table suggests that halving emissions in the 2030s – a likely target for many DFIs – is possible for holding periods of up to 10 years, but will require at least 40% of new investments to be zero carbon if the portfolio turns over more slowly.

**DFIs provide patient capital and are often involved in large projects, such as infrastructure investments.** This results in project portfolios that are lumpy and slow to turn over. Specialist investors who focus on transactions with long project horizons such as materials, heavy industry and energy may find it particularly difficult to meet strict annual emissions targets. Infrastructure investments, in particular, are multi-decadal and lock in carbon emissions for their lifetime. **Figure 2** illustrates the problem

graphically, in a simplified schematic. High-carbon or long-lasting projects have a greater tendency to run over the emissions constraint. Whilst such portfolio features will be reflected in the organisation-specific emissions pathway of a DFI, they still pose practical challenges.

**Dealing with slow, lumpy portfolios requires flexibility in the way carbon targets are structured and emissions accounted for.** This was supported by an interviewee who described it as “*an envelope or budget*” to ensure one gets “all the efficiency” [1] gains. Flexibility can be introduced both over time (“when” flexibility) or by sharing emissions across different DFIs (“where” flexibility). The terms are borrowed from the early literature on integrated assessment models (e.g., Manne and Richels, 1999).



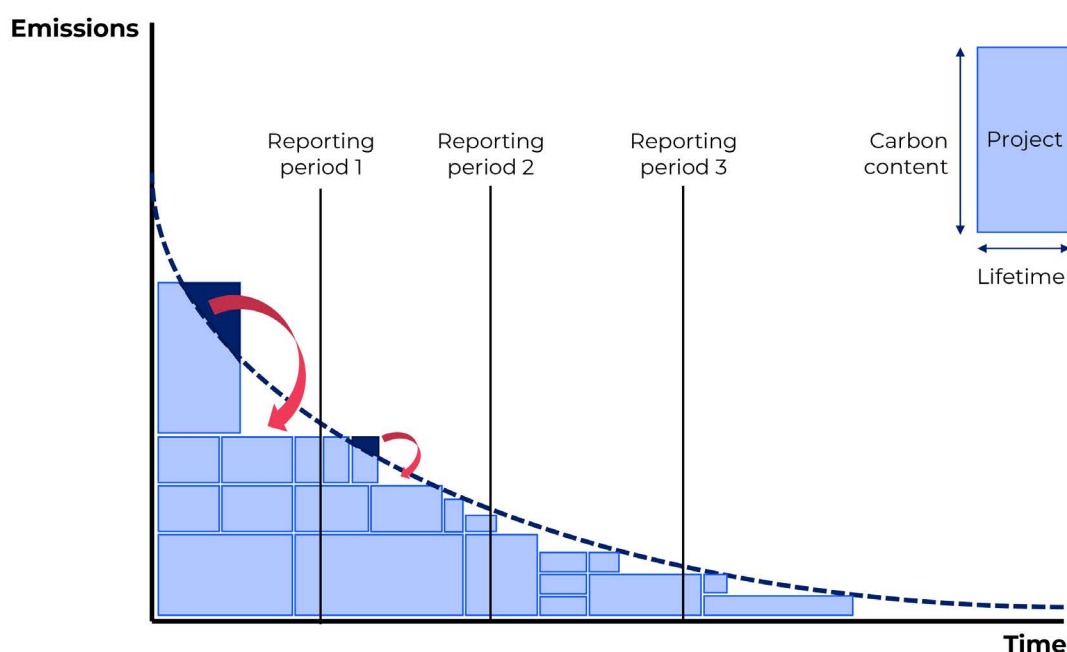
**Figure 2.** Long-term and high-carbon projects can breach strict carbon portfolio targets

**Note.** Portfolio emissions are the sum of project emissions. Each project is represented by a block, the height of which reflects annual emissions and the width represents project duration. Projects with high emissions (or long duration) are more likely to hit the net zero constraint (dotted line). The light blue block is an example of a project that is very high-carbon whilst the red block shows one which is long-lasting, thereby violating the carbon constraint. Note that zero-carbon projects (which will grow in number) are not visible since they have a height of zero.

**“When” flexibility can be introduced through multi-year carbon budgets.** Expressing emissions pathways as a series of multi-year carbon budgets, rather than annual reduction targets, makes it possible to allocate carbon space across time. Carbon budgets could, for example, coincide with the strategy period of a DFI (**Figure 3**).

The merit of multi-year carbon targets has been demonstrated in a national context in the UK, whose legally binding emissions reduction path is set through a series of five-yearly carbon budgets. The five-year budget period was chosen to accommodate short-term socio-economic fluctuations (Averchenkova et al., 2021). In a development context, multi-year targets provide space for portfolios to turn over and for emissions reductions in high-carbon projects to ramp up. Developing and implementing credible emission reduction strategies takes time, and multi-year budgets help to accommodate these timelines.

**The scope for “when” flexibility is restricted by the need for credibility in the net zero commitment.** In principle, maximum flexibility would be achieved through a single, aggregate carbon budget that extends to the point when net zero is reached. However, this would raise concerns about intertemporal credibility, or time-inconsistency. Long-term budgets provide discretion to frontload emissions and use up the available carbon space quickly. The tight carbon constraint this implies for later years then becomes difficult to meet. One interviewee compared this restriction to the EU Emissions Trading System, emphasising that *“you want the intertemporal flexibility, but you don’t want too much of it because too much borrowing leads to credibility problems”* [1]. Hence, the benefit of “when” flexibility needs to be balanced against the need for intertemporal credibility.



**Figure 3.** “When” flexibility through carbon budgets

**Note.** The figure shows how different emissions pathways (dotted lines) constrain portfolio emissions. Portfolio emissions are the sum of project emissions. Each project is represented by a block, the height of which reflects annual emissions and the width represents project duration. Emissions may be moved between blocks within a reporting period. Note that zero-carbon projects (which will grow in number) are not visible since they have a height of zero.



**Regular performance updates can mitigate the time-inconsistency problem of “when” flexibility.** Sound internal governance structures can facilitate forward planning and mitigate the risk that emissions budgets are used up too fast. External reporting requirements, at greater frequencies and related to disclosing plans of how the longer-term target will be reached could be an important tool to manage time-inconsistency risks. The incentive to reduce emissions in high-carbon projects can be further strengthened through future emissions accounting (see below).

**“Where” flexibility can be introduced through the sharing of carbon space amongst DFIs.** It is already common for DFIs to co-finance large projects. It allows individual organisations to remain within their risk appetite. The emerging norm in carbon accounting is to allocate carbon emissions to financiers in proportion to their financial contribution (PCAF, 2022). The co-financing of projects therefore not only shares financial risks, but also the carbon footprint of large projects. The need to remain within carbon targets, as well as within financial risk parameters, could thus create an additional impetus for collaboration between DFIs.

**“Where” flexibility requires common carbon accounting rules and similar net zero ambitions across participating institutions.** Consistent carbon accounting will have to ensure that all project emissions are allocated. Caution will also have to be exercised that emissions are shared only across responsible financiers with equivalent net zero policies. If these conditions are not in place, there is a risk of carbon leakage and aggregate emissions reductions will not be achieved.

**Safeguards should be in place to avoid financing structures that bypass carbon liabilities.** There is a risk that for lumpy projects

financing structures will emerge that reflect carbon accounting concerns rather than the needs of the project, similar to how firms often develop complex ownership structures to avoid tax. The financing structure should be optimised towards project goals and not carbon avoidance. DFIs need a code of best practice around carbon avoidance to ensure transparency. Lessons may be learnt from the scrutiny of tax avoidance schemes, which raises similar challenges.

## Incentivising Transition Projects

**Portfolio targets favour low-carbon sectors over so-called transition projects, which have high emissions but are essential for net zero development.** There are two main categories of transition projects (BII, 2022; Caldecott, 2021). The first is emissions reduction projects that help to decarbonise difficult sectors such as iron and steel, cement, aviation and petrochemicals. The second category is emissive projects which support the net zero supply chain, for example by investing in battery factories or port facilities for offshore wind. Both types generate indirect carbon benefits, which are not captured in the portfolio target. In fact, engaging with these activities could result in a short-term increase in portfolio emissions, which may mean projects a disincentivised under carbon emission targets.

**One way to incentivise emissions reduction projects is through future emissions accounting.** Under future emissions accounting, the emissions assigned to a project are calculated using the carbon intensity expected at its end (**Figure 4a**). The temporary rise in emissions when the project enters the portfolio gets discarded in the DFI accounts (though not in national emissions inventories, ensuring environmental integrity at the aggregate level). The projections for end-project emissions would be revised as the transaction progresses, and eventually forecasts would be replaced by actual,

**“** We need the checks and balances around when transition finance will be applied [14] **”**



verified emissions. The system rewards emissions reductions and creates an incentive to see them through.

**Future emissions accounting creates risks if the expected emissions cuts do not materialise.** If emissions at the end of a project are higher than anticipated, those higher actual emissions will enter the carbon account and count against the portfolio target. To mitigate such performance risks, DFIs could establish a provisioning system for carbon emissions. Similar to the way banks provision underperforming loans, carbon space would be set aside for emission reduction projects that are expected to underperform.

**Another way to promote transition projects is through a system of “transition credits”.**

The system would operate similarly to tax credits, where desirable activities benefit from a tax break. In the case of transition credits, a

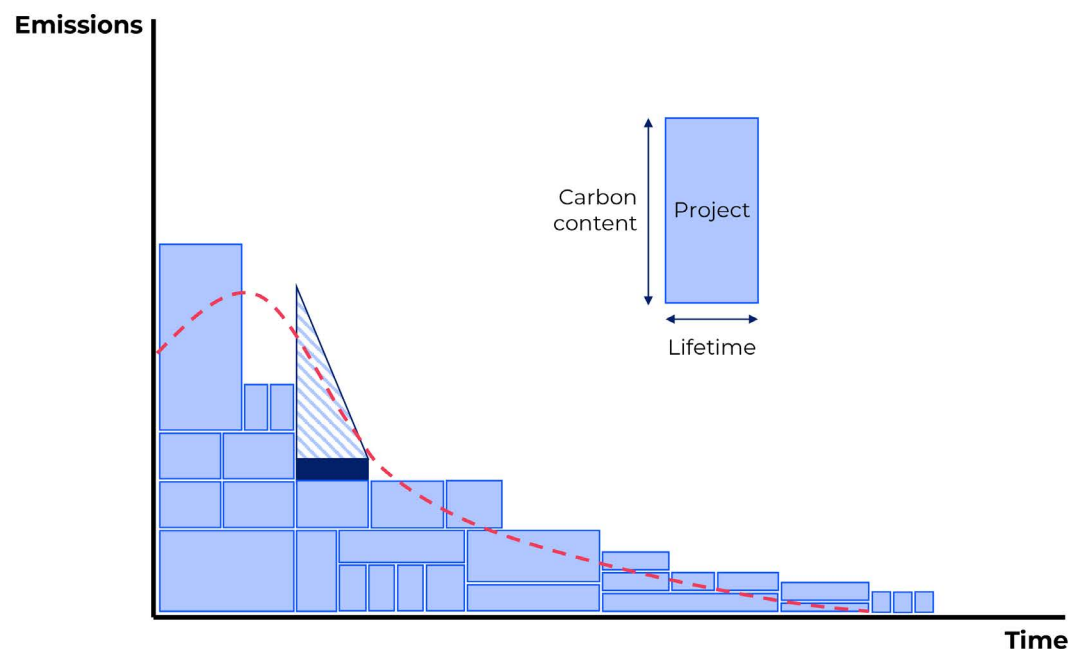
discount on actual emissions would be awarded to qualifying projects that have indirect carbon benefits (**Figure 4b**). The system could build on the “green transition” criteria and project lists that some DFIs have already developed (e.g., EBRD, 2020).

**The transition credit would reflect the indirect carbon benefits of an intervention, perhaps structured in indicative benefit bands.** In the case of clean supply chain projects, the indirect benefits would relate to the clean investment that is supported (for example, offshore wind generation supported by a new port facility). For decarbonisation projects in high emissions sectors, transition credits would be banded according to the expected emission reduction benefits. The credit would provide an additional reward for engaging in emissions reduction activities, beyond the incentive provided through future emissions accounting.

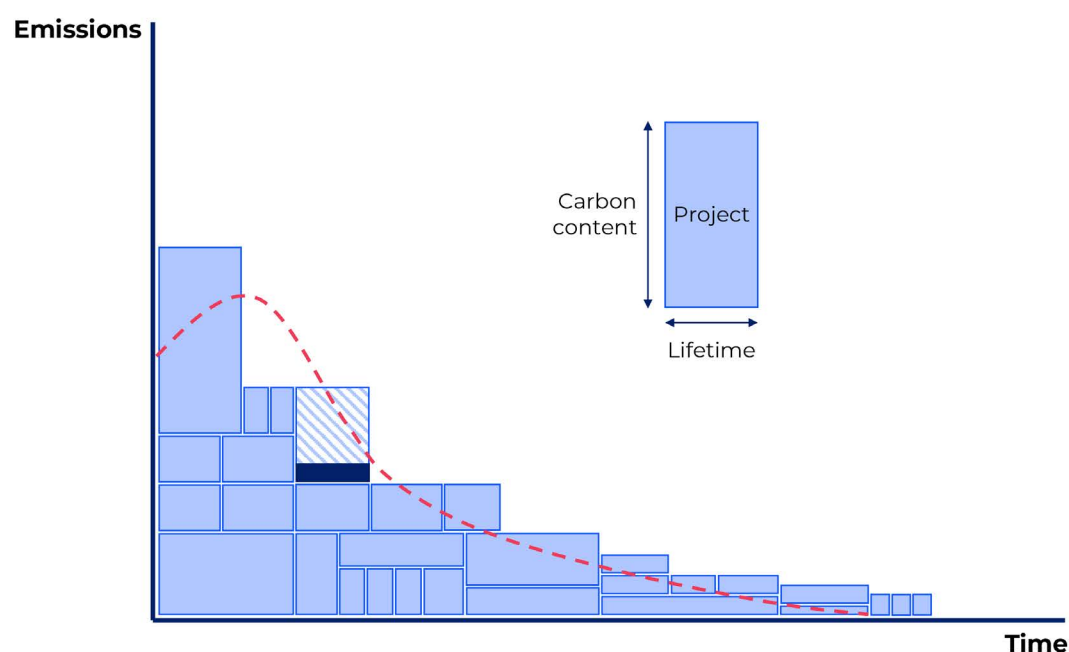
**The future emissions accounting and transition credit systems would be operated internally by DFIs, but they would have to be transparent, rules-based and externally audited.** For example, the award of transition credits could be documented in a separate “transition account”, which lists relevant projects, the credits awarded and the indirect benefits that are anticipated. Independent verification is critical to ensure that the added incentives the two systems provide do not result in “greenwashing”, that is, the justification of projects that are not consistent with net zero commitments at the expense of genuine zero-carbon projects. As one interviewee [14] points out: *“We need the checks and balances around when transition finance will be applied”*. The assessment of transition credits must be *“carefully managed”* whilst ensuring granularity as *“the devil is in the details”* [14]. If multiple DFIs adopt similar schemes there may be a case for a common set of accounting conventions and performance standards.



## (a) Future emissions accounting



## (b) Transition credits



**Figure 4.** Rewarding transition projects

**Note.** This figure shows how different emissions pathways (dotted lines) constrain portfolio emissions. Portfolio emissions are the sum of project emissions. Each project is represented by a block, the height of which reflects annual emissions (which may reduce in the course of the project) and the width represents project duration. Projects may enter the accounts of their expected emissions at the project end (panel a) or at a discount to reflect indirect benefits (panel b). Note that zero-carbon projects (which will grow in number) are not visible since they have a height of zero.

“Context-specific net zero pathways can be set to reflect the development needs of the countries a Development Finance Institution is active in”



## Managing Trade-offs with Development Objectives

**The Sustainable Development Goals (SDGs) are highly interconnected and DFIs have to consider the various trade-offs involved.** High and low-carbon projects alike can impact other SDGs, positively and negatively. For example, low-income countries have pressing energy needs, which require context-specific solutions (Mulugetta et al., 2022). This should inform discussions about renewable energy deployment and how to meet rising consumption needs. Similarly, the need to boost agricultural productivity could require more fertiliser, which is emissions-intensive in both production and use, requiring careful consideration on *how* and *where* it is used. A further concern is that zero-carbon projects themselves could have negative repercussions on the local ecology and local communities. Afforestation and hydropower projects are notorious examples (Seddon et al., 2020).

**The special treatment of high-development projects should be avoided to prevent greenwashing.** It is tempting to impose a softer carbon constraint on high-development projects, for example by awarding a “development discount” as is suggested for transition projects. In practice, such discounts would be difficult to control and would undermine the target. Unlike the case of transition projects, where there is a clear carbon benefit (i.e., reduced emissions in the future), there is no one metric to evaluate what warrants a “development discount”.

**The important discussion about climate and development trade-offs should instead happen at the level of the portfolio target.** Context-specific net zero pathways can be set to reflect the development needs of the countries a DFI is active in (as argued above). Once that envelope is defined, no further allowances need to be made. If the development benefits of a project are strong, it

should be acceptable to allocate carbon space to it within the agreed envelope.

**A shadow price of carbon, which is consistent with the chosen emissions pathway, can help to inform climate and development trade-offs.** An internal carbon price will be particularly useful in institutions that perform economic cost-benefit analysis as well as financial analysis, that is, calculate the social return on investment of their operations (Mishan and Quah, 2020). Social return on investment calculations are an established way to quantify the social and environmental impacts of a project, comparing for example the development benefits of energy access with its environmental costs. The internal carbon price should reflect the marginal cost of the chosen emissions pathway, rather than the social cost of carbon (Kaufman et al., 2020). This will ensure consistency with the adopted net zero target and help to allocate the available carbon space efficiently for maximum development benefit.

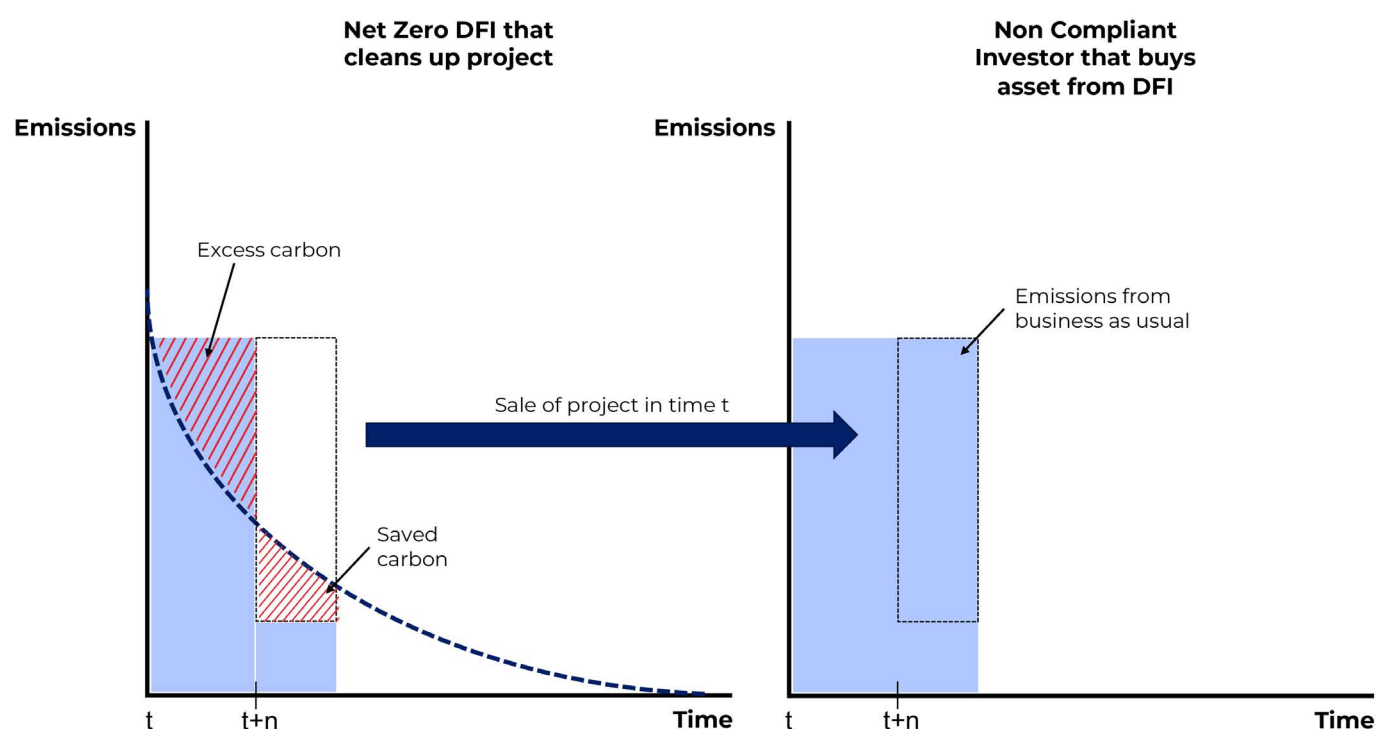
## Accounting for Emissions After a Project Ends

**Reducing emissions can be a slow process. Most investors tend to exit, or loans are repaid, before the projects they supported become net zero.** This raises the issue that individual investors can clean up their books simply by exiting investments. Indeed, financial economists have started to devise net zero consistent exit roadmaps (Bolton et al., 2022). Such divestment only works to reduce emissions if there is coordination across all investors (Kruitwagen et al., 2017). Otherwise, emissions are merely assigned to a new owner, perhaps one with fewer qualms about climate change. Other investors may not have the same standards of disclosure or may run the asset in a more polluting manner.

**Net zero strategies demand longer holding periods and criteria for a responsible exit.** Net zero requires patient capital to see through decarbonisation plans. However, even patient investors tend to exit a project, or loans are repaid, before the product or process becomes net zero (**Figure 5**). To ensure emissions fall in the real economy (Caldecott et al., 2022), net zero targets need to be complemented by safeguards for the management of emissions once debts are repaid or a DFI exits the project. A responsible exit requires the vetting of potential new owners and their commitment to further clean up operations or wind them down in a responsible manner. One interviewee [I4] highlights how “*withdrawing all funding in one go [...] creates wider societal and environmental risks*”.

**The continued reporting of emissions after a project has ended could provide longer-term scrutiny at acceptable costs.** An important benefit of emissions targets is that project companies will put in place systems to monitor and report their emissions. These systems should continue to be used, and emissions should be reported after a DFI exits or a debt is repaid. Continued reporting by project companies will provide ongoing scrutiny and increase the likelihood that emissions continue to be managed. DFIs should be able to collate this information at a reasonable cost. The emissions of completed projects would not be part of the formal net zero portfolio target and may be reported at a lower frequency (for example, one year and five years after exit). Furthermore, continued reporting on post-project emissions creates an incentive for the DFI to ensure that the exit is conducted responsibly and that assets are sold to responsible entities. Selling to entities that reduce the asset's emissions will result in the DFI's post-project emissions declining, which is good reputationally.





**Figure 5.** How the sale of an asset to a non-compliant investor could lead to higher aggregate emissions

**Note.** This figure shows the risks related to a DFI selling an asset before it is cleaned up (after  $n$  years). Instead of the reduction in carbon shown in the left panel (represented by the dotted white box), the project is run in a business-as-usual manner, after sale, such that emissions are equal to the entire shaded blue region on the right panel.

## Putting in place binding principles, standards and legal requirements could ensure emissions are managed beyond project-end.

The prospects of a responsible exit might be strengthened through legal provisions in the sales contract, which commit the new owners to maintain emission reduction efforts. So-called “green pills” (Armour et al., 2022) instate a penalty for failure to deliver upon the climate commitment post-exit. Examples include contract-based mechanisms which can be

customised to the firm’s circumstances and supported by standard corporate governance mechanisms. Such contractual structures work best for the sale of equity stakes. They are less suitable for debt financing, where the prospect of follow-on transactions with DFIs may serve as an incentive instead. These are forward-looking measures and in the short term it seems unlikely that there will be any type of legal requirement over legacy emissions. Instead, the pressure will come from public scrutiny.



# 4 Conclusions

**Net zero portfolio targets provide a transparent and credible direction of travel for DFIs committed to climate action.** The strength of these targets is that they are based on outcomes, that is, the quantity of emissions that are removed, reduced or avoided. Implementing these targets will help move the system towards better reporting of financed emissions and incentivise project developers to disclose their carbon footprint. From a science-based perspective, this provides the clearest way to assess if financial institutions are decarbonising.

**The practical challenges of reducing carbon in the portfolio are real but not insurmountable.** There will be short-term technical difficulties related to the lumpiness of investments, the ability to exit responsibly, how to decarbonise high emission assets without being penalised, and the trade-offs with development. Yet, much like how laws, standards and a canon of best practices were set to maintain financial stability and compliance with environmental, social and governance (ESG) metrics, there are also solutions to help navigate net zero operationally.

This think-piece puts forward concrete proposals to address five salient DFI concerns about net zero investment portfolios. Our proposals are as follows:

## To select an appropriate emissions pathway

- **Use a context-specific emissions pathway,** which reflects the strategic priorities of a DFI (e.g., their sectoral focus) and the common but differentiated responsibilities of its portfolio countries. Such pathways can be constructed bottom up based on country-sector data, whilst remaining in line with Paris-aligned global model pathways.
- **Adopt a deliberate strategic response to the net zero pathway.** By actively selecting investments that represent climate-development win-wins, DFIs can ameliorate perceived (or real) short-term trade-offs between climate action and development. This would change the nature, but not the size of investment and impact opportunities for DFIs.

## To deal with inertia and lumpiness in the portfolio

- **Use “when” and “where” flexibility to reduce the impact of large projects and the slow turnover of project portfolios.** “Where”

flexibility can be introduced through multi-year carbon budgets, perhaps coinciding with the DFI's strategy cycle, to reallocate carbon space across time. "When" flexibility can be introduced through the co-financing of large projects, which DFIs already do for risk management reasons. Co-financing allows DFIs to share project emissions amongst other financiers with similar net zero ambitions.

- **Adopt transparent safeguards against carbon avoidance structures.** This is to ensure that project structures reflect the needs of a project, rather than a desire to minimise its carbon footprint. This is akin to the scrutiny financial institutions are already under to police tax avoidance.

## To incentivise transition projects

- **Use future emissions accounting and / or a system of "transition credits"** to incentivise and reward emission reduction projects in high-carbon sectors and emissive projects in the low-carbon supply chain. Both solutions reduce the negative impact these essential projects would otherwise have on portfolio emissions. Transparent and auditable safeguards are again needed to prevent the abuse of this system.

## To manage trade-offs with development objectives

- **Resist special treatment for high-development projects.** To prevent greenwashing, the emissions from high development impact must not get preferential treatment. They should be awarded the carbon space they require

within a net zero pathway that reflects the development context in which a DFI operates (per the first point above).

- **Use an internal carbon price** for organisations that carry out social return calculations. An internal shadow price of carbon can help inform climate-development trade-offs by explicitly comparing the carbon costs and development benefits of a project. To serve this function, the internal carbon price must be aligned with the emissions pathway of the DFI.

## To account for emissions after a project ends

- **Continue to monitor emissions after a project ends.** Portfolio targets encourage early exits and shorter loan tenors, but emission reductions must continue after a project ends. The separate reporting of emissions from completed projects (outside the portfolio target) would encourage responsible exits (to investors committed to net zero) and increase the likelihood that emissions management continues.

## These recommendations need to be debated further, refined and tested in a practical context.

The aim of this paper was to advance the debate on how to make net zero portfolios practically feasible. This debate is critical to ensure net zero portfolio standards move closer to operational reality. Whilst the direction of travel is clear, solutions will have to account for the varying capacities, resources, strategies and organisational cultures of each DFI, as this ultimately underpins their ability to move towards a net zero investment portfolio.



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