

Pillar III: Boosting international co-operation and partnerships

Module 1: Mapping financial and technical assistance for industry decarbonisation in emerging markets and developing economies: Taking stock of trends in hard-to-abate sectors

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Abbreviations and acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
AIGCC	Asia Investor Group on Climate Change
CAF	Development Bank of Latin America and the Caribbean
CBT	Climate Budget Tagging
CCUS	Carbon Capture Utilisation and Storage
CIF	Children's Investment Fund
CIFF	Childrens Investment Fund Foundation
CO ₂	Carbon Dioxide
CPI	Climate Policy Initiative
CRS	Creditor Reporting System
DAC	Development Assistance Committee
DRI	Direct Reduced Iron
EBRD	European Bank for Reconstruction and Development
ECF	European Climate Foundation
EIB	European Infrastructure Bank
EMDEs	Emerging Markets and Developing Economies
ESMAP	Energy Sector Management Assistance Program
GCF	Green Climate Fund
GEF	Global Environment Facility

GHG	Greenhouse Gas
GMP	Global Matchmaking Platform
Gol	Government of Indonesia
iCS	Instituto Clima e Sociedade
IDB	Inter-American Development Bank
IFI	International Finance Institution
IIGCC	Institutional Investors Group on Climate Change
IKI	International Climate Initiative
IPPU	Industrial Processes and Product Use
IsDB	Islamic Development Bank
JFPR	Japan Fund for Poverty Reduction
LBNL	Lawrence Berkeley National Laboratory
MAF	Mitigation Action Facility
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
RCBT	Regional Climate Budget Tagging
RFF	Resources for the Future
SDGs	Sustainable Development Goals
TBD	Eastern Southern African Trade and Development Bank
TOSSD	Total Official Support for Sustainable Development
TRL	Technology Readiness Level
UNIDO	United Nations Industrial Development Organisation
USD	United States Dollar
WB	World Bank

Executive summary

1. **Decarbonising industry is key to achieve Paris Agreement’s objectives but faces multiple challenges.** Industrial production accounts for up to 40% of the total energy-related global carbon dioxide emissions (CO₂), with three sub-sectors – steel, cement and chemicals – forming the bulk of these emissions. At the same time, industry is one of the most challenging sectors to decarbonise: technologies for near-zero emission production are still under development or are not yet competitive, industrial assets have long lifetimes, many of the materials produced are highly traded, where pricing is competitive.

2. **Massive investments are needed and scaling-up finance for a net-zero industry in emerging markets and developing economies (EMDEs) will require mobilising all sources: international, domestic, public and private.** Recent analysis from the Organisation for Economic Co-operation and Development (OECD) suggests that annual global investments in low-carbon technologies for industry decarbonisation need to increase by a factor of three to five by 2030 compared to current levels to align industrial emissions with net-zero pathways. EMDEs have a key role to play for successful global climate action, including through decarbonising their existing manufacturing industries and leapfrogging emissions-intensive production routes. Yet, investment challenges remain and scaling up finance from both public and private financial sources will be crucial to get low-carbon projects off the ground. In this context, this is the first mapping undertaken that covers financial and technical assistance to industry decarbonisation from public bilateral and multilateral sources, private finance mobilised, philanthropies, and institutional investors. This mapping report aims to provide insights on assistance towards industry decarbonisation with a primary focus on EMDEs. Identifying financing needs and gaps will be indeed key for channelling adequate financial sources towards the urgently needed low-carbon projects for industrial decarbonisation.

3. **Available data on financial and technical assistance for industry decarbonisation in EMDEs is scattered and scarce.** Data availability, granularity and transparency constitute a key challenge for mapping financial and technical assistance. Data at the level of industry sub-sectors, technologies, and countries is limited. Differences of scope and methodology hinder any further direct comparison across existing sources. As such, no single source of data captures the full scope of financial and technical assistance for industry decarbonisation in EMDEs. In that respect, this first mapping that brings together information from various sources fills a critical knowledge gap on assistance for industry decarbonisation.

4. **Financial and technical assistance for industry decarbonisation in EMDEs have not received the necessary attention so far.** While accounting for 70% of global industry’s total CO₂ emissions, available data suggests that mitigation-related public bilateral and multilateral assistance directed towards the steel, cement and chemicals sectors has been limited in the period between 2000 and 2021. This trend is equally confirmed through the analysis of some philanthropies’ portfolios, as industry is far from accounting for the lion share of mitigation related assistance across all sectors. As per institutional investors, initiatives are emerging to support the decarbonisation of their portfolio through sustainability approaches.

5. **The level of financial assistance for industry decarbonisation in EMDEs showcased in this mapping is not commensurate with the scale of the challenge.** The level of financial assistance

quantified in this mapping cannot be directly compared with the total global investments required to put the industry sector on a net-zero pathway. Indeed, estimates refer to specific sources of financial assistance and cover specific industry sub-sectors, in EMDEs. Additionally, a large share of the total required investments in EMDEs is expected to be financed from private sources, whereas this report put more emphasis on the public sources. Nevertheless, the orders of magnitude suggest that the current levels of financial assistance for industry decarbonisation in EMDEs are far from the levels required to mobilise the investments for a net-zero industry.

6. **Public bilateral and multilateral financial assistance has triggered private finance mobilisation for decarbonising the steel, cement and chemical sectors.** Data further suggests that the steel, cement and chemicals sectors did benefit from private finance mobilised by official development finance interventions over the past decade. While these three sectors represented a modest share from private finance mobilised for mitigation across all sectors, public bilateral and multilateral assistance nevertheless enabled to catalyse private investments.

7. **There is considerable space to tap into a wider range of providers, recipient countries and financing instruments.** Mitigation-related financial assistance – whether arising from public bilateral and multilateral sources or from the private finance mobilised – targeting these three sectors in EMDEs are characterised by a limited pool of providers and recipients. There are thus opportunities for these sub-sectors to potentially benefit from a more varied set of providers that have been recorded in sectors other than industry. In terms of recipients, there is room for targeting additional countries, especially in regions which face the unique challenge of growing while decarbonising their industry. Limited geographical diversification of providers and recipients is also highlighted through the analysis of philanthropies' portfolios, as OECD countries formed the bulk of recipients. Finally, there is room for improvement in diversifying the financing instruments used for public bilateral and multilateral assistance.

8. **Recipient projects have focused on incremental emission reductions rather than on disruptive approaches.** Projects benefitting from public bilateral and multilateral assistance have mostly focused on improving energy efficiency, circular economy approaches, and waste management. Financial and technical assistance directed to cross-cutting breakthrough technologies such as carbon capture utilisation and storage (CCUS) and clean hydrogen have been limited and did not focus on implementation projects.

9. **Various funds and IFIs programmes cover the industry sector, but not in a targeted way. A wide range of funds and IFIs' programmes could support decarbonisation projects in general.** However, few operating funds are currently closely targeting the industry sector, and none of them are fully dedicated to the deep decarbonisation of the industry sector. While transverse and multi-sectoral funds can provide benefits to industry decarbonisation projects, targeted funds could further increase opportunities and impact for industrial emission reductions fostering industry decarbonisation, by ensuring that industry related projects do not have to compete with projects of a very different nature (e.g. energy, transport, land-use) to access funds.

10. **There is a growing interest from IFIs and funds in developing industry decarbonisation projects and innovative financing mechanisms.** Interviews conducted with a selection of IFIs, and funds further reveal that multiple financing instruments could be leveraged for decarbonisation projects, the suitability of which depends on each project. Crucially, lack of project pipeline and market risks appear as the most critical barriers for scaling-up industry decarbonisation projects. Most IFIs and funds interviewed consider de-risking instruments as a valuable tool to overcome barriers associated with financing industry decarbonisation projects. Financing mechanisms and/or products reported as most adequate for overcoming funding challenges regarding industrial decarbonisation are the use of concessional finance and blended finance instruments. Finally, the need for long-term policy and regulatory frameworks towards net-zero is key to provide clear policy signals and to create enabling conditions for investors.

11. **There is significant potential for institutional investors such as pension funds to contribute to financing industry decarbonisation in EMDEs.** Institutional investors – such as pension funds and insurance companies – are key participants in financial markets, holding more than USD 100 trillion of assets in OECD countries alone. Data availability constitutes a key challenge to gain further insights on whether investments pertaining to steel, cement and chemicals relate to decarbonisation purposes. As institutional investors are shaping initiatives to drive the decarbonisation of their portfolio, these could be a vehicle to taking part in industry decarbonisation.

12. **Building on this mapping, key areas for actions can be drawn to increase the focus and impact of financial and technical assistance towards industry decarbonisation in EMDEs.** These include the following areas:

- Decarbonising industry and high-emitting sub-sectors such as steel, cement and chemicals are key for reaching net-zero objectives. It is therefore important to factor in the industry sector when considering financial and technical assistance for decarbonisation objectives in EMDEs.
- When considering financial and technical assistance for industry decarbonisation in EMDEs, targeting a wider range of countries – including countries with large and/or high-emitting manufacturing capacity - would contribute to a significant potential for reducing global industrial emissions.
- Likewise, targeting programmes or implementation projects for disruptive low-carbon technologies (e.g. clean hydrogen or CCUS) would support deep emission reductions for the industry sector in EMDEs.
- The development of financing instruments that could cope with the specific challenges of industry decarbonisation related projects (e.g. high upfront investments, nascent low-carbon technologies ...) would foster the uptake and scalability of these projects. Meanwhile, setting clear policy signals and enabling conditions would increase investor confidence in such projects.
- Designing funds which closely consider or target the industry sector would facilitate industry decarbonisation projects to access financial and technical assistance.
- Given the growing interest in developing industry decarbonisation projects, there is an opportunity to leverage the key findings of this mapping when designing new funds, programmes and/or platforms. Equally, there is a unique opportunity to boost international cooperation and partnerships for financial and technical assistance towards industry decarbonisation in EMDEs, such as through the Climate Club's Global Matchmaking Platform.

13. **Finally, tracking financial and technical assistance for industry decarbonisation in EMDEs would require establishing a common and fit-for purpose framework.** Developing methodologies and data collection frameworks will be paramount for supporting effective use of scarce public finance resources and policy guidance towards industry decarbonisation.

14. **Climate Club could play a leading role to close this gap.** Besides providing the essential input to the Global Matchmaking Platform, developing a dedicated database could help monitor progress, identify gaps and needs across industrial activities. Additionally, insights on domestic support in EMDEs will be critical as this is a growing area in view of decarbonising local manufacturing industries. Climate Club can expand its efforts for supporting methodology development and data collection in this area as well, based on existing frameworks.

1 Background: Climate Club's ambition for boosting international co-operation and partnerships

What is at stake?

15. Accounting for up to 40% of the total energy-related global CO₂ emissions, the industry sector is key to achieve Paris Agreement's objectives. Three sub-sectors alone – steel, cement and chemicals – represent 70% of direct CO₂ industrial emissions. At the same time, industry is one of the most challenging sectors to decarbonise: technologies for near zero emission production are still under development or are not yet competitive, industrial assets have long lifetimes, many of the materials produced are highly traded, where pricing is competitive (Climate Club, 2023^[1]).

16. Massive investments are needed to put industry on a net-zero pathway. Recent OECD analysis suggests that annual global investments in low-carbon technologies for industry decarbonisation need to increase by a factor of three to five by 2030 compared to current levels to align industrial emissions with net-zero pathways (Cordonnier and Saygin, 2023^[2]). While the global annual capital expenditures in the materials industry amounted to around USD 300 billion between 2016 and 2020, annual investments in new production plants compatible with net-zero pathways for steel, cement, chemicals and aluminium production currently only amount to USD 15 billion. This needs to increase to USD 70 billion by 2030 and USD 125 billion by 2050. Investments to decarbonise the industry sector will require financing from all sources: international, domestic, public and private.

17. The challenge is of critical importance for EMDEs, where the majority of industry investments are set to take place to respond to growing demand. EMDEs are key for successful global climate action, including through decarbonising their existing manufacturing industries and leapfrogging emissions-intensive production routes. Industry is key for social and economic development, and planning for its transition aligned with net-zero emission pathways will be essential for a just and climate-friendly development.

18. A particular challenge for EMDEs lies in the scale of investments needed in low-carbon technologies for decarbonising their manufacturing industries. Most of the needed technologies are capital intensive, as well as in demonstration or early stages of commercialisation. Their implementation risk and the high costs associated with net-zero transition may slim industrial companies' profits. Therefore, scaling up finance from both public and private financial sources will be crucial to get low-carbon projects off the ground.

19. Pillar III of the Climate Club Work Programme 2024 aims to enhance multi- and bilateral cooperation between members demonstrating solidarity, with a focus on leveraging public and in particular private finance and the necessary complementary technical assistance (Climate Club, 2023^[3]). The objective of Pillar III is to contribute to improving enabling conditions, thereby mobilising private finance for

industry decarbonisation. The Climate Club will offer EMDEs support in accelerating their industry decarbonisation – considering principles of just transition, gender, and social inclusion. This objective is operationalised by outlining and enhancing the existing financial and technical assistance landscape and by identifying ways to accelerate mobilising private capital through innovative financing instruments. This is critical due to the major gap in knowledge and experience in how private capital mobilisation can be achieved for industry decarbonisation.

Scope and objective of the report

20. To contribute to this objective, this document provides the key findings of Pillar III Module 1 “Mapping of relevant work and initiatives covering public financing and technical assistance programmes for industry decarbonisation” with a focus on EMDEs. This constitutes the first ever mapping of financial and technical assistance to industry decarbonisation in EMDEs undertaken by the Climate Club. It is worth noting that the intention of this mapping is not to track progress towards climate finance objectives. Rather, it aims to provide key trends and findings, which could be put forward by the Climate Club to contribute to increasing the focus and impact of financial and technical assistance for industry decarbonisation in EMDEs.

21. As of today, assistance to industry decarbonisation originates from different sources. Bilateral development assistance programmes or IFIs commonly provide public finance and technical assistance for this purpose. Philanthropic organisations are increasingly expanding their portfolio to cover decarbonisation of industries. Institutional investors such as pension funds potentially represent a major source of long-term financing to support sustainable growth in EMDEs. To capture this variety, this report explores the following sources of financial and technical assistance:

- Public bilateral and multilateral assistance (e.g. IFIs) focusing on EMDEs, by leveraging OECD databases. This is complemented by a deep dive into a selection of existing funds and IFI programmes;
- Private finance mobilised through official development finance interventions, based on OECD data;
- A selection of philanthropic organisations covering all regions, and based on information publicly available;
- Institutional investors, particularly a sample of pension funds.

22. Almost all data used for the purpose of this report comes from publicly available sources, including from the OECD databases, the Climate Fund Explorer of the NDC Partnership, websites of IFIs, philanthropies and institutional investors as well as their related project and asset databases. Collected data from the public domain is complemented with information gathered through interviews of the largest sources of financial and technical assistance to ensure latest developments are captured, including verifying the data and information on the available industry decarbonisation programmes, and the financing instruments used therein.

23. The report is structured as follows: Chapter 2 assesses and provides the landscape of information available on public finance to industry decarbonisation. Chapter 3 provides an in-depth assessment of the data available from the OECD Development Assistance Committee (DAC)’s Creditor Reporting System (CRS) database on public bilateral and multilateral flows directed to EMDEs for industry decarbonisation. In Chapter 4, an overview of currently available public finance and technical assistance programmes from various funds and IFIs is provided. Chapter 5 provides insights on private finance mobilised by leveraging OECD data. Chapter 6 shares findings on the available and recent assistance programmes from philanthropies and pension funds. Each chapter highlights different trends that can be compared, such as the lack of data granularity on financing industry decarbonisation. However, when reading this report, the financing amounts in each chapter should not be compared to one another, given that public, private, and

philanthropic funding is disbursed differently and can include a different mix of funding sources. In addition, the data on these three stakeholder groups come from various sources in which the methodology differs, thus each chapter, for example, provides a different scope in terms of years highlighted.

Role of this report in the context of the Climate Club Work Programme 2024

24. The mapping of financial and technical assistance is conducted as the main deliverable of Module 1 of Pillar III, and it contributes to Module 2 "Developing a better understanding of successful financing instruments and enabling conditions to mobilise private capital" of the same Pillar. Outcomes of both Modules 1 and 2 provide inputs to the Global Matchmaking Platform (GMP) that is being developed by the Climate Club in collaboration with the United Nations Industrial Development Organisation (UNIDO) as the GMP's secretariat.

25. Moreover, the document provides inputs to Module 3 of Pillar II of the Climate Club Work Programme "Toolkit for industry transition and assembling targeted support policies", notably to mapping of decarbonisation policies for steel and cement (Climate Club, 2023^[3]). In a similar vein, document outcomes are closely linked with Module 1 of Pillar II "Building international common understanding on comparable and interoperable standards" where definitions and standards for near zero emission materials are critical to direct and use public and private sources of financial and technical assistance in the most effective way.

2 Public assistance for industry decarbonisation in EMDEs: Assessing the state of play

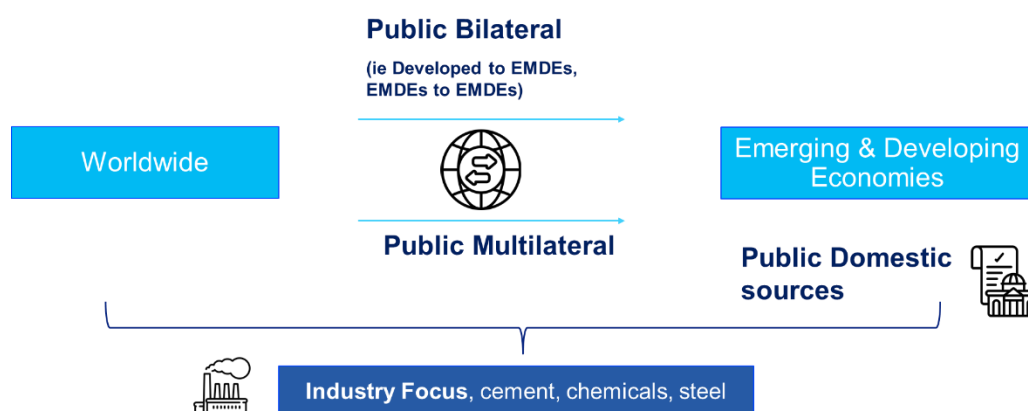
Scope of analysis

26. This chapter aims to identify existing analyses and sources of data which could support the mapping of public financial assistance envisioned under Pillar III Module 1 of the Climate Club. It further explores the scope, strengths, and challenges of each source regarding the mapping objectives.

27. The mapping of public financial assistance for industry decarbonisation in EMDEs envisioned would cover the following flows of assistance (Figure 2.1). These include public bilateral flows (from developed countries to EMDEs, from EMDEs to EMDEs), public multilateral flows, and public domestic sources.

28. For these types of financing assistance, flows targeting industry decarbonisation are selected, by focusing on emission intensive sub-sectors, namely steel, cement and chemicals.

Figure 2.1. Scope of the mapping of public financial assistance



Source: OECD

Which sources can inform about financial assistance for industry decarbonisation in EMDEs?

Available data on public financial assistance for industry decarbonisation in Emerging Markets and Developing Economies (EMDEs) is scarce.

29. First and foremost, it should be noted that data on public financial assistance for industry decarbonisation in EMDEs is scarce and scattered. This constitutes a first key finding for establishing such a mapping as undertaken in this report. For instance, data pertaining to industry decarbonisation is less highlighted than for other areas (such as renewable energy) and is not necessarily available and displayed in existing analyses. A first assessment of selected data and existing analyses is conducted to further refine the proposed work, inform the methodology, as well as to identify data challenges underpinning this mapping. This assessment covers sources pertaining to public financial assistance¹ for decarbonisation, and whose scope could inform this mapping:

- OECD: “Climate Finance Provided and Mobilised by Developed Countries” (OECD, 2023^[4]) (OECD, 2022^[5]).
- OECD: OECD: “Climate related Finance data under the OECD Development Assistance Committee (DAC) Creditor Reporting System (CRS)”, which monitors climate-related development finance to Development Assistance Committee (DAC) recipients on a yearly basis. It is supported by a dataset which includes over 8,000 project level transactions a year (OECD, 2023^[6]) (OECD, 2024^[7]);
- Climate Policy Initiative (CPI): “Global Landscape of Climate Finance”, tracking global climate finance flows on a yearly basis (Climate Policy Initiative, 2023^[8]);
- LeadIT: Report on “the role of IFIs in the transition to low-carbon steel”, assessing IFIs assistance to the steel sector (Maltais et al., 2022^[9]).²

Granularity highly varies across sources, and no single source of data fully captures the envisioned scope.

30. Overall, the scope of financial flows, providers, and sector granularity highly varies across the selected data sources and analyses. Each one of these sources or analyses has its own objectives, therefore not necessarily designed in a way to focus on specific sectors; on a specific geography or to provide detailed characteristics on the financial flows. As such, none of them perfectly fits with the targeted scope of the mapping envisioned under Pillar III Module 1 (see Table 2.1).

¹ Includes technical assistance.

² Complemented by the report (Leadit, 2023^[18]), which focuses on IFIs programmes – see Chapter 4.

Table 2.1. Assessment of selected data sources and analyses in terms of scope and data availability

	LeadIt (Maltais et al., 2022 ^[9])	CPI (Climate Policy Initiative, 2023 ^[8])	OECD: Climate Finance Provided and Mobilised by Developed Countries	OECD Development Assistance Committee (DAC) / Creditor Reporting System (CRS) (OECD, 2024 ^[7]): Climate related development finance dataset (OECD, 2023 ^[6])	Total Official Support for Sustainable Development (TOSSD) (TOSSD, 2024 ^[10])
Timeline	2000 - 2021	Yearly average (latest version available for 2021/2022)	Aggregate trends 2013 – 2022 (OECD, 2023 ^[4]) Disaggregated insights: 2016 – 2020 (OECD, 2022 ^[5])	[2000-2021], but depends on the flows, e.g. [2013-2021] for MDBs	2019 - 2022
Nature of financial flows	Public: List of 24 IFIs	Public: multilateral, bilateral, domestic Private	Public multilateral (attributed to developed countries), bilateral Export credits Private mobilised by public finance (attributed to developed countries)	Public multilateral, bilateral Private philanthropies Mobilised private finance by official development finance interventions ³ - including for climate action - available in (OECD, 2024 ^[11])	Public multilateral, bilateral Export credits South-South and Triangular cooperation Support to International Public Goods Private mobilised by public finance
Geography of provider countries	Worldwide ^(*)	Worldwide	39 developed countries (based on Annex II Parties to the UNFCCC)	38 countries (almost all developed countries)	Around 59 bilateral providers (mostly developed countries but also include some developing countries).
Industry coverage and related level of granularity	Yes, only the steel sector Overall sectoral development (i.e. beyond mitigation and adaptation)	Yes, "Industry" Mitigation & adaptation	Yes, "Industry, Mining & Construction" Mitigation & adaptation	Yes, "Industry, Mining & Construction" and sub sectors (steel, cement, chemicals...) Mitigation & adaptation	Yes, "Industry, Mining & Construction" and sub sectors (steel, cement, chemicals...) Sustainable Development Goals (SDGs), and includes mitigation & adaptation
Other available breakdown	By region, by type of project	By country, provider, financial instrument (grant, debt, equity, other)		By country, provider, financial instrument (grant, debt, equity, mezzanine), project	By country, provider, financial instrument, project
Dataset publicly available	No	No	No	Yes	Yes

Note: (*): Green fields refer to a scope / coverage matching the ones of the mapping envisioned.

Sources : (OECD, 2023^[4]), (OECD, 2022^[5]), (OECD, 2023^[6]), (OECD, 2024^[7]), (Climate Policy Initiative, 2023^[8]), (Maltais et al., 2022^[9]), (TOSSD, 2024^[10]).

³ Chapter 5 provides the analysis on the private finance mobilised by official development finance interventions.

31. Each source presents its own characteristics with respect to the objective and scope of the mapping envisioned. Compared to the other sources, the LeadIT analysis has a global coverage of financial providers, and explicitly deals only with the steel sector (Desanlis et al., 2023^[12]). Financial flows refer to 24 IFIs and excludes bilateral and domestic flows. Compared to the other sources, the CPI analysis covers global financial providers, as well as the coverage of domestic funds. Data publicly available is displayed in aggregated form for the entire industry sector (Climate Policy Initiative, 2023^[8]).

32. The OECD climate related development finance dataset from the DAC/CRS provides a high level of granularity. It allows for an industry sub-sectoral, country, providers, project, and financial instrument breakdown (OECD, 2023^[6]). Domestic sources of financing, as well as financial flows arising from emerging and developing economies (“South-South” flows) are not covered.

33. The Total Official Support for Sustainable Development (TOSSD) is an international standard for measuring the resources provided for sustainable development for developing countries (TOSSD, 2024^[10]). It is designed to monitor different types of official resources for sustainable development in general, namely well beyond climate mitigation purposes. The types of resources covered include public bilateral and multilateral flows, private finance mobilised through official means, as well as contributions to International Public Goods. In terms of provider countries, it encompasses resources both from developed countries and from some South-South co-operation providers (e.g. Brazil, Chile, Costa Rica, Indonesia, Mexico, Peru). The TOSSD dataset is composed of both data that are compiled specifically for TOSSD and data from other reporting frameworks, such as the CRS database. As for the DAC/CRS database, it allows for an industry sub-sectoral, country, providers, project, and financial instrument breakdown.

34. Information availability on domestic public sources targeting industry decarbonisation would rather rely on a country case-by-case basis, for instance by leveraging domestic Climate Budget Tagging (CBT) Box 2.1. For countries reporting to TOSSD, TOSSD covers public finance allocated within their national borders under its Pillar II on “Regional and global expenditures in support of sustainable development” (TOSSD, 2024^[10]). In this way, TOSSD could inform on such domestic assistance, depending on the country and the level of granularity of data reported.

35. Finally, it is worth noting that the preliminary assessment of these various sources suggests that:
- Available data on public finance and technical assistance for industry decarbonisation is scattered and scarce,
 - No single source of data captures the full scope of public finance assistance,
 - Data availability at industry sub-sector level is limited,
 - Differences of scope and methodology hinder any direct comparison across existing sources.

Box 2.1. Indonesia’s good practice on Climate Budget Tagging: a lever to map domestic financial support for industry decarbonisation

Since 2016, the Government of Indonesia (GoI) has developed a Climate Budget Tagging (CBT) to track climate related expenditures in its national budget. The CBT system covers both support for mitigation and adaptation, which is reported at the level of budget activities. This system constitutes a best practice among EMDEs, which is worth highlighting in the context of mapping domestic support for industry decarbonisation.

The implementation of the CBT from 2016 to 2022 has reached IDR 569 trillion (around 40.3 USD billion), representing 3.5 % of the total state budget. Around 58% of the total amount was directed towards mitigation related activities (including for green industry, waste management, energy and

transportation...), around 38% towards adaptation, and 4% allocated for mitigation and adaptation co-benefits. Meanwhile, several regions have conducted regional climate budget tagging (RCBT) trials in 2020-2023. The average share of the climate related budget to the regional budget was around 5%, with some regions with significantly higher shares, such as Surabaya (around 20% of the regional budget) and DKI Jakarta (around 13%) (Ministry of Finance Media Gathering, 2024^[13]).

The CBT system has enabled the Gol to initiate new financial instruments of sovereign Green Bond and Green Sukuk, which aligned with Indonesia's aim to achieve SDGs. Projects eligible for financing or refinancing by the Green Sukuk are selected by using tagging attributions. Since 2018, Indonesia has issued a total of USD 6.9 billion in green sukuk, and whose proceeds were used to finance a wide range of projects, such as renewable energy, energy efficiency, sustainable transportation, waste management, and climate resilience (Republic of Indonesia - Ministry of Finance, 2024^[14]).

The CBT was also used to report Indonesia's domestic mitigation expenditures in the TOSSD data survey on 2017 flows, under Pillar II on "Regional and global expenditures in support of sustainable development" (Delalande G., 2020^[15]). For the purpose of this mapping, CBT data related to "*Industrial Processes and Product Use (IPPU)*"⁴ project activities have been provided by the Fiscal Policy Agency of the Ministry of Finance of the Government of Indonesia. This sample covers budget activities of around 158 billion rupiah (around 11.2 USD million) cumulated over the period from 2016 to 2022, from both Ministry of Industry and Ministry of Environment and Forestry.

While CBT for IPPU activities cover a wide range of sectors beyond the manufacturing industries (e.g. agricultural machinery, maritime industry, forest products...), the vast majority of them are transverse activities which can benefit to the manufacturing industry sectors. For instance, transverse budget activities include "industrial technical services", "industrial competitiveness" or "research and development". In addition, a few activities explicitly refer to growth and development of specific sectors, such as steel or chemicals. As for decarbonisation, activities classified under the "Green Industry" labelled category encompass policy related aspects (e.g. GHG emission reductions, green industry standards) but also infrastructure, research and development or capacity building. Building on a disaggregated level of activities, the CBT constitutes a relevant tool which could be used to inform on Indonesia's domestic support for the industry decarbonisation. Overall, such tagging systems are key enablers to monitor domestic assistance to industrial decarbonisation, and Climate Club can help to facilitate knowledge exchange and dissemination of these best practices.

⁴ Here "IPPU" refers to the CBT labelling of the activities category. It should not be understood as budget outputs dedicated to addressing industrial process emissions only, as activities may also be relevant to addressing emissions from fuel combustion.

3 Public bilateral and multilateral assistance for industry decarbonisation in EMDEs: What has been provided so far?

Leveraging the OECD DAC/CRS data for an evidence-based approach

36. This chapter aims to analyse to what extent mitigation related development finance⁵ towards EMDEs has so far targeted industry decarbonisation. To this end, data from the OECD DAC/CRS database is leveraged, as it allows for a relevant granular level of analysis in terms of sectors, amount, providers and recipients, type of financial instrument, and project level data (OECD, 2023^[6]).

37. As a prerequisite, it is important to note that some methodological aspects may constitute challenges when drawing conclusions on the amounts of flows⁶ extracted. These include the following points:

- Flows from Multilateral Development Banks (MDBs) are recorded from 2013 onwards, while from other sources data are available since 2000. This implies that the total amount of mitigation related finance development towards EMDEs between 2000 and 2012 may be inherently underestimated.
- The methodologies for assessing the “climate related” nature of a recorded project differ depending on the type of provider. For MDBs, the methodology identifies the components of a project that directly contribute to adaptation and/or mitigation. The total amount pertaining to the project is thus not necessarily captured, but only a share. For the bilateral financial flows, the climate related nature of a recorded project is associated to the full project value.
- Mitigation related development finance recorded under other categories than “Industry” may however indirectly benefit the industry sector (e.g. low-carbon energy, other multisector banking, and financial services).
- For confidentiality reasons, some flows are presented in an aggregate form and are not attributed to any specific sector. Nevertheless, some of these flows may have benefitted to the industry sector. This limitation means that the total amount explicitly displayed for industry and its sub-sectors may be underestimated. In addition, such aggregated data does not allow to showcase the specific characteristics of the related flows at the project level activity.

⁵ Terminology used here follows the labelling used in the OECD DAC/CRS Database and refers to development finance towards mitigation related purposes.

⁶ In the following parts, the term “*financial flows*” refers to the “*cumulative bilateral and multilateral mitigation-related development finance commitments between 2000 and 2021*”.

38. Given the previous points, the amounts of flows presented hereafter should be used with caution. Main findings should be interpreted by focusing on key trends rather than on the amounts themselves.

39. For the sake of this analysis, “industry” here refers to the hard-to-abate emission industry sectors including steel, cement, and chemicals where the first two sectors are the main focus of the Climate Club Work Programme 2024. Specific categories are selected to reflect this scope within the DAC/CRS classification (cement, chemicals, steel and cross-cutting industry categories to some extent). Therefore, any comparison with other analyses referring to an “industry” category (e.g. analyses mentioned in chapter 2) should be carefully undertaken, as the respective sub-sectors covered may significantly differ.

Mitigation related development finance for steel, cement and chemicals sectors: an overview

40. For this assessment, the following industry sub-sectors were selected: basic metal industries⁷, chemicals and fertilisers,⁸ cement, lime, and plaster⁹ (OECD, 2023^[6]). All other industry sub-sectors reported in the OECD DAC/CRS database, such as small and medium-sized enterprises (SME) development, agro-industries, forest industries, textiles, leather and substitutes, pharmaceutical production and others have been excluded (OECD, 2023^[6]).

41. Additionally, a “cross-cutting industry” commitment category was created which includes industrial policy and administration¹⁰, industrial development¹¹ as well as technological research and development (R&D)¹² This is intended to reflect the fact that financial assistance arising from this cross-cutting category could have indirectly benefited to the steel, cement and chemicals sectors. However, as this cross-cutting category may have indirectly benefited a wide range of other sub-sectors too, a deep dive into the steel, cement and chemicals sectors is needed for further targeted outcomes.

While representing 70% of global industry’s CO₂ emissions, assistance for decarbonising the steel, cement and chemical sectors has not received the necessary attention over the past two decades.

42. Between 2000 and 2021 around USD 2.4 billion¹³ of mitigation-related public development finance¹⁴ was committed for cross-cutting industry activities (Figure 3.1). As previously mentioned, this amount should be interpreted with caution: while some of these flows may have indirectly benefited the steel, cement and chemicals sectors, they may also have benefited to a wide range of other sub-sectors (e.g. SMEs, agro-industries, pharmaceutical...).

⁷ DAC CRS PURPOSE CODE 32169

⁸ DAC CRS PURPOSE CODES 32164 AND 32165

⁹ DAC CRS PURPOSE CODE 32166

¹⁰ DAC CRS PURPOSE CODE 32110

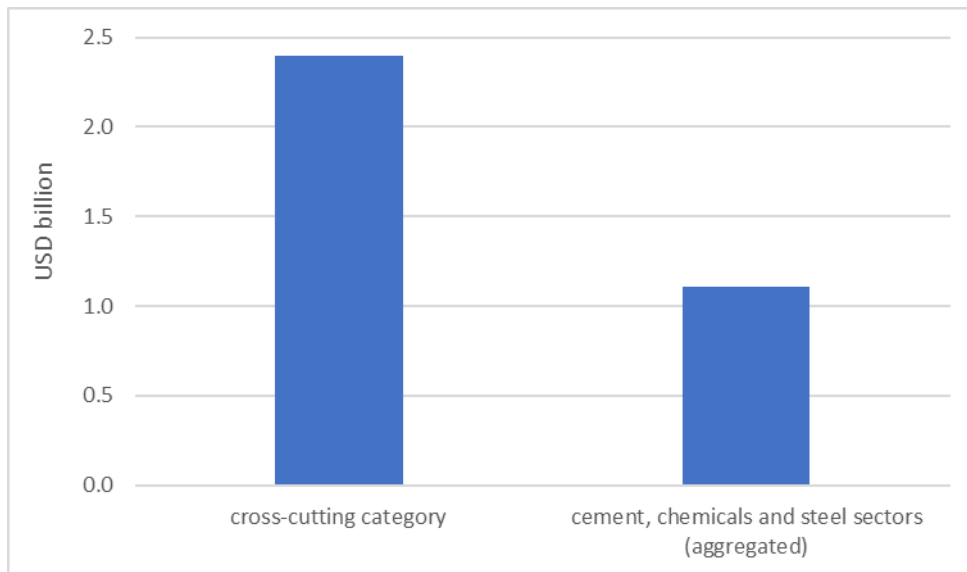
¹¹ DAC CRS PURPOSE CODE 32120

¹² DAC CRS PURPOSE CODE 32182

¹³ For the cross-cutting industry category, only the total amount of flows is provided (and not detailed characteristics), as it includes a high-share of confidential related aggregated data.

¹⁴ In the following parts, the term “financial flows” refers to the “cumulative bilateral and multilateral mitigation-related development finance commitments between 2000 and 2021”.

Figure 3.1. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for cross-cutting industry category and hard-to-abate sub-sectors



Source: Data analysis from (OECD, 2023^[6])

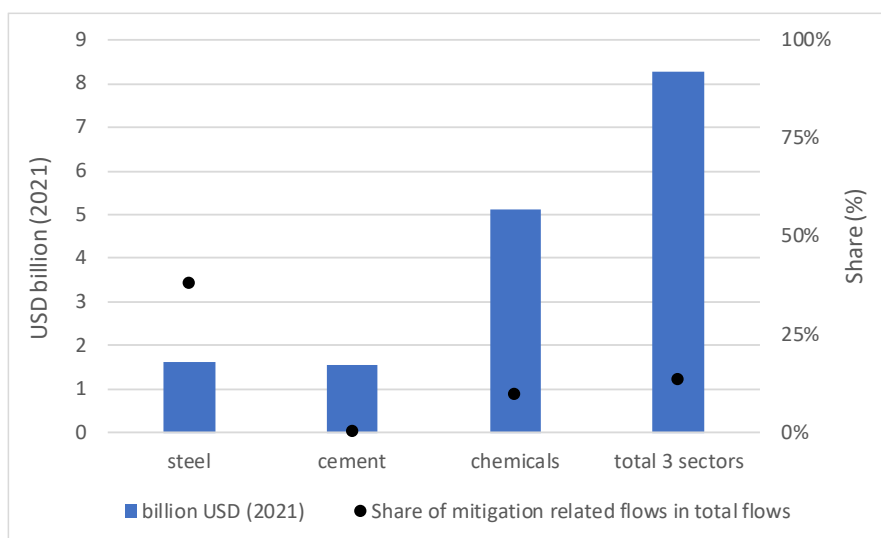
43. Amounting to USD 1.1 billion, steel, cement and chemical sectors together represented less than 0.5% of the total recorded mitigation-related development finance between 2000 and 2021 (OECD, 2023^[6]). To put this amount into perspective, it represents less than the investment required in an average-sized single greenfield¹⁵ steel integrated plant equipped with near-zero emission breakthrough technology (hydrogen-based direct reduced iron (DRI) production or carbon capture use and storage (CCUS) based).

44. Furthermore, this amount represents around 15% of total development finance targeting these three sectors (namely including climate and non-climate related development finance flows). The share of mitigation-related development finance however varies across the three sectors (Figure 3.2).

45. While the total development finance amount targeting the steel sector is quite like the one related to the cement sector, the mitigation related amount is significantly higher for the steel sector (nearly 40%). In the chemical sector, total mitigation related flow is in the same order of magnitude as the steel sector. However, the total development finance amount for the chemicals sector is more than twice higher than for the steel sector (Figure 3.2), the resulting mitigation related share is significantly lower for the chemical sector (10%) than for the steel sector (40%, Figure 3.2).

¹⁵ Greenfield investment refers to investment in new production capacity.

Figure 3.2. Cumulative [2000-2021] development finance and share of mitigation related flows across sectors



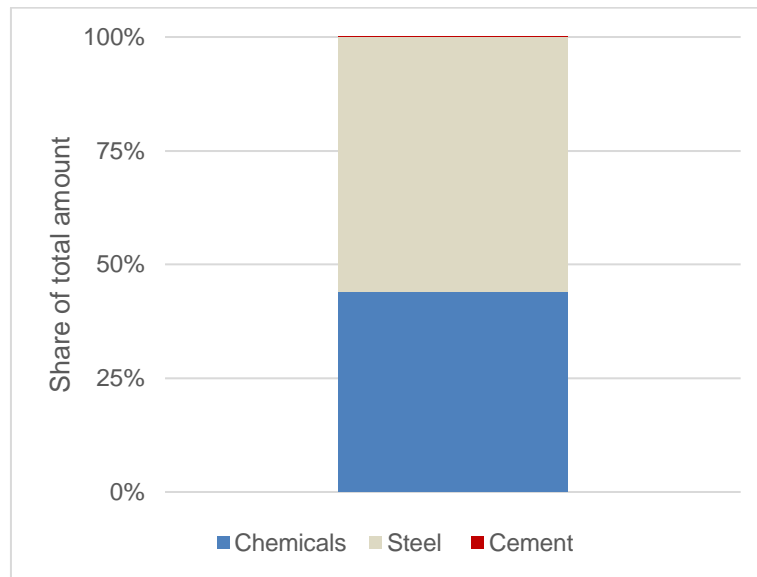
Source: Data analysis from (OECD, 2023^[6])

46. Regarding mitigation-related development finance, around half of this amount was directed to the chemical sector (around 45%), and the other half to the steel sector (around 55%). While representing around 30% of global industry's direct CO₂ emissions, the cement industry did not benefit from any significant financial flow¹⁶ (less than 0.1% of the cumulative recorded financial flows of the three sub-sectors) (Figure 3.3).

47. In terms of providers, almost all finance commitments arose from multilateral financial institutions (Figure 3.4). In particular, 80% of the financial flows targeting these three sectors were provided by the European Bank for Reconstruction and Development (EBRD), (Figure 3.5). The main recipients were Türkiye and Ukraine (nearly 80% of flows, (Figure 3.6.). 80% of the financial assistance was provided through debt instruments (Figure 3.7), almost all of which was reported as non-concessional.

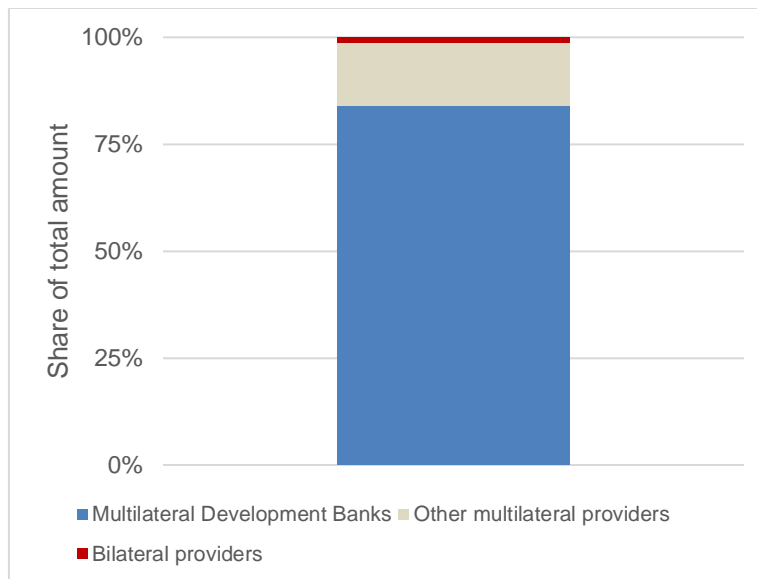
¹⁶ Based on publicly available data from the OECD DAC/CRS. The cement sector may have however benefitted from part of the financial and technical assistance included in confidential aggregated data.

Figure 3.3. [2000-2021] bilateral and multilateral mitigation-related development finance for the steel, cement and chemicals sectors - Sub sectoral breakdown



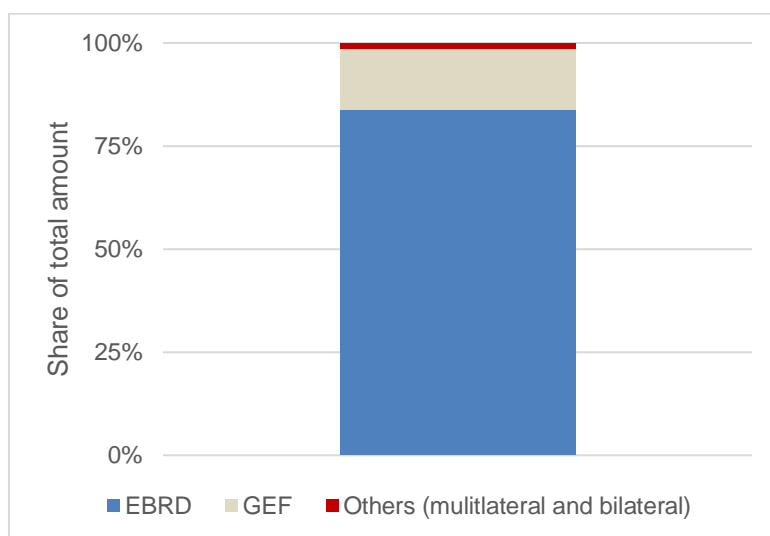
Source: Data analysis from (OECD, 2023^[6])

Figure 3.4. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for the steel, cement and chemicals sectors - Types of providers



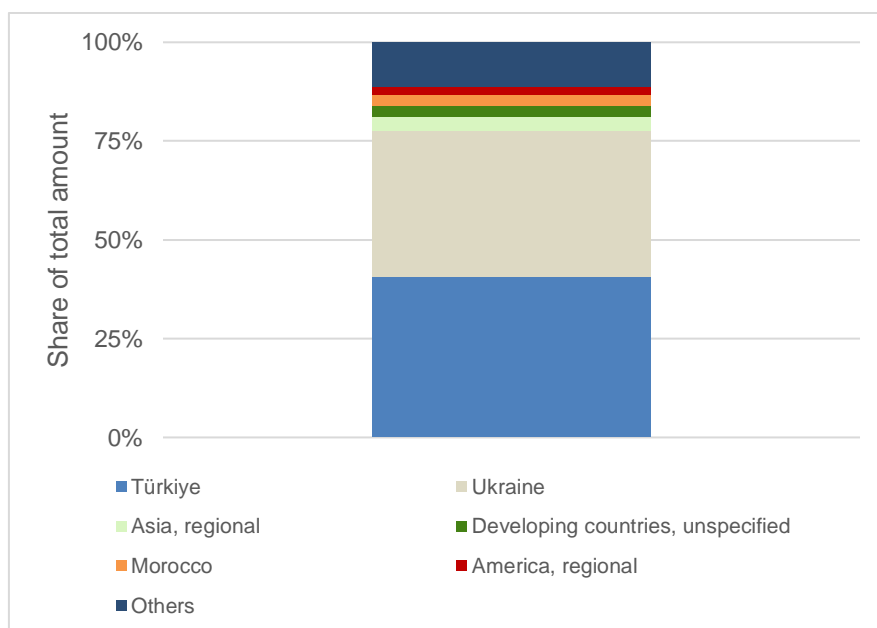
Source: Data analysis from (OECD, 2023^[6])

Figure 3.5. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for the steel, cement and chemicals sectors - Providers



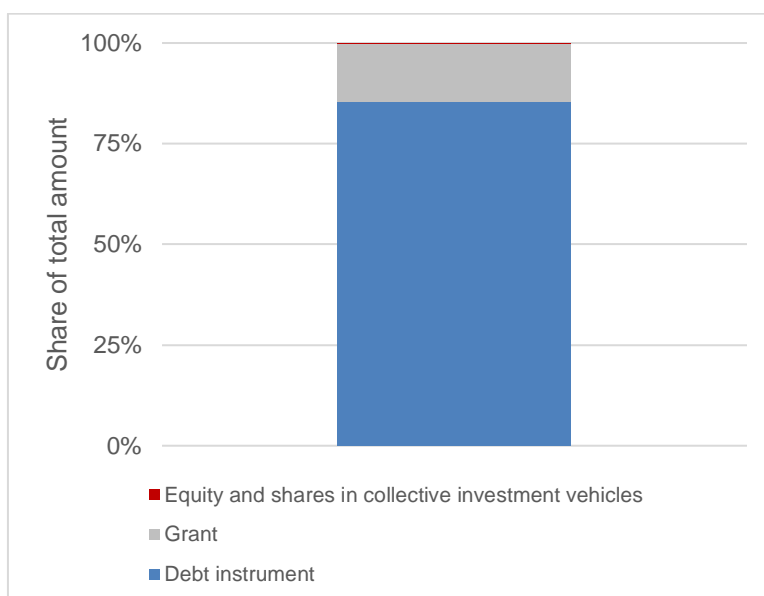
Source: Data analysis from (OECD, 2023^[6])

Figure 3.6. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for the steel, cement and chemicals sectors - Recipient countries



Source: Data analysis from (OECD, 2023^[6])

Figure 3.7. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for the steel, cement and chemicals sectors - Financing instruments deployed



Source: Data analysis from (OECD, 2023^[6])

Financial flows targeting hard-to-abate industries are underpinned by similar characteristics and would benefit from becoming more diversified

48. Financial flows targeting emission intensive industries show similar patterns across steel and chemical sectors (Table 3.1). These patterns directly echo to the ones underpinning the grouping of the three industry sectors previously depicted. Indeed, for both the chemical and steel sector, almost all financial flows came from multilateral financial institutions (mainly from the EBRD), were mainly directed to Türkiye and Ukraine, and mostly provided through debt instruments.

Table 3.1. Cumulative bilateral and multilateral mitigation-related development finance between 2000 and 2021 – Main characteristics for the chemical and steel sectors

	Amount (USD)	Type of flows (multilateral vs bilateral)	Main providers	Main recipients	Main type of financing instrument
Total three sub-sectors (cement, chemical, steel)	1.1 billion	Almost all multilateral	EBRD (around 80%)	Türkiye, Ukraine (around 40% each)	Debt instruments (80%)
Chemical	Around 500 million	Almost all multilateral	EBRD (65%), GEF (33%)	Türkiye (50%)	Debt instruments (70%)
Steel	Around 600 million	Almost all multilateral	Almost all EBRD	Ukraine (60%), Türkiye (33%)	Almost all debt instruments

Note: “Chemicals” include Fertilisers. Given the negligible finance commitments targeting the cement industry, the latter is not included in this comparison.

Source: Data analysis from (OECD, 2023^[6])

49. In addition to the similarities across sub-sectors previously depicted, it is worth noting that there was a limited pool of providers, recipients, and instruments (Table 3.1). For each sub-sector, at least two-thirds of the financial flows arose from only one provider, the EBRD, and only one type of financial

instrument, non-concessional debt instruments. There are thus opportunities for these sub-sectors to potentially benefit from the dozens of providers that have been recorded for other sectors (i.e. beyond industry), as well from a variety of instruments (e.g. equity and mezzanine finance instruments from among the range of instruments recorded overall). Boosting finance to the required scale for a net-zero industry will rely on a wide range of instruments, approaches, and sources of financing.

50. Furthermore, for each sub-sector, half of the financial flows or more was directed to only one country, namely Türkiye (for chemicals) or Ukraine (for steel) (Table 3.1). Again, there is room to target other countries through mitigation-related development finance, especially regions which face the unique challenge of growing while decarbonising their industry (e.g. Southeast Asia).

So far, recipient projects have focused on incremental emission reductions and financial flows directed to cross-cutting breakthrough technologies have been limited

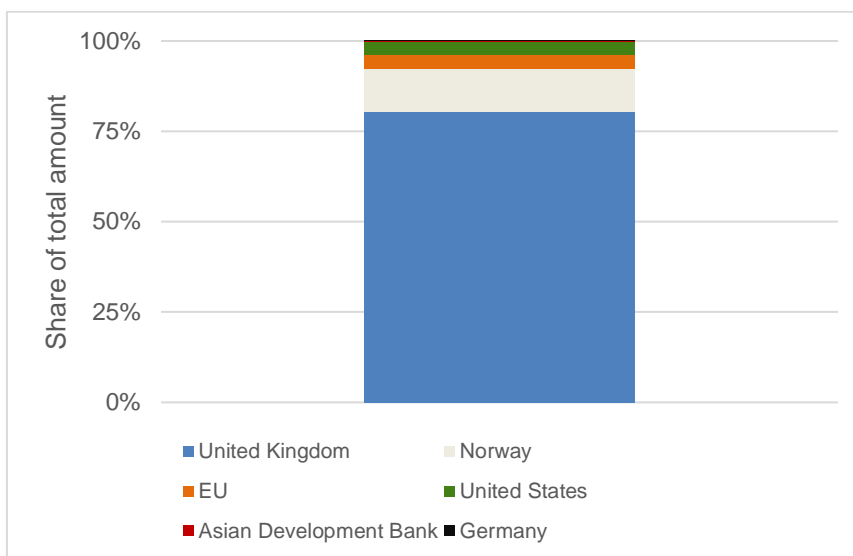
51. Projects related to the steel, cement and chemical industry which have benefitted from mitigation-related development finance have one aspect in common, in the sense that they were not related to disruptive technologies needed for decarbonising industries aligned with a net-zero emission pathway. Available information suggests that these projects rather focused on improving energy efficiency and circular economy approaches, including waste management.

52. Based on the same OECD DAC/CRS data, the analysis on the steel, cement and chemicals sectors is complemented by a focus on CCUS and clean hydrogen¹⁷ projects that have benefitted from mitigation-related development finance. While these projects do not specifically target the three sub-sectors, they refer to two technologies, namely CCUS and clean hydrogen which are key enablers for putting industry emissions on a path aligned with net-zero (these technologies could have a particularly important role in decarbonising these three sub-sectors). To advance the use of CCUS and clean hydrogen in EMDEs specifically, technology transfers and co-development for such technologies are of critical importance. This further reinforces the relevance of mitigation-related development finance that target projects that support and transfer such technologies from developed countries to EMDEs.

53. Overall, cumulative financial flows targeting CCUS projects amounted to USD 110 million between 2000 and 2021. Nearly all the financial assistance was provided through bilateral country flows and grants. The UK was the main provider, contributing to 80% of total financial flows (Figure 3.8). Almost all recipients' countries remained unspecified (Figure 3.9). Finally, in terms of content, these projects did not relate to industrial project implementation, but rather to research, education, assistance for policy framework or capacity building.

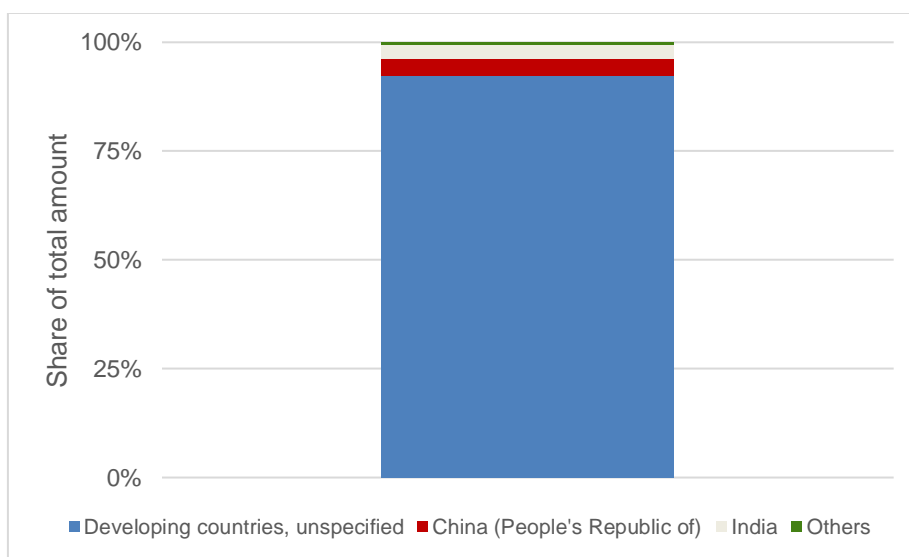
¹⁷ Clean hydrogen includes the production of all types of hydrogen that have significantly lower greenhouse gas emissions during production compared to hydrogen produced from natural gas such as from renewable energy resources like solar and wind and through the electrolysis process, and from natural gas coupled with clean and efficient carbon capture process.

Figure 3.8. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for CCUS projects - Providers



Source: Data analysis from (OECD, 2023^[6])

Figure 3.9. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for CCUS projects - Recipient countries

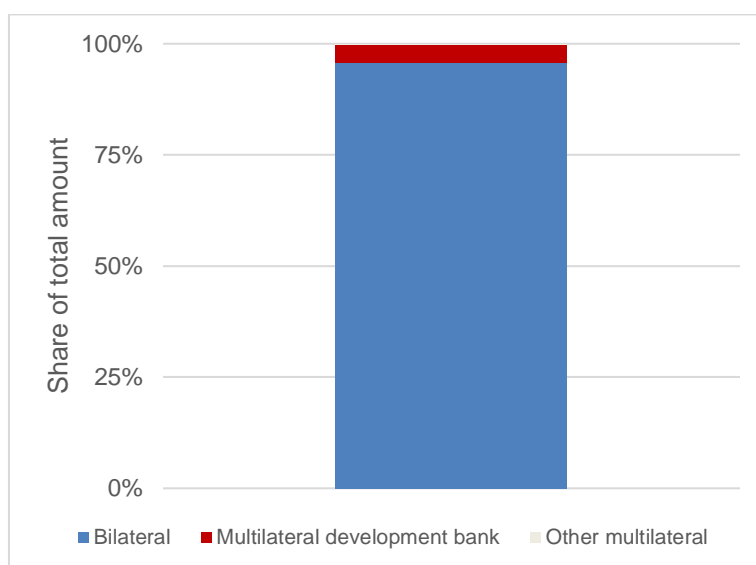


Source: Data analysis from (OECD, 2023^[6])

54. On clean hydrogen, the cumulative mitigation-related development finance totalled USD 45 million between 2000 and 2021. As for CCUS projects, all financial assistance was provided through grants. Almost all assistance came from bilateral country flows (Figure 3.10) More than 90% of flows came from Germany (Figure 3.11), and almost all recipients remained unspecified (Figure 3.12). Similarly, to the characteristics of CCUS projects, these hydrogen related projects didn't focus on industrial project implementation, but rather on research, education, assistance for policy framework or capacity building.

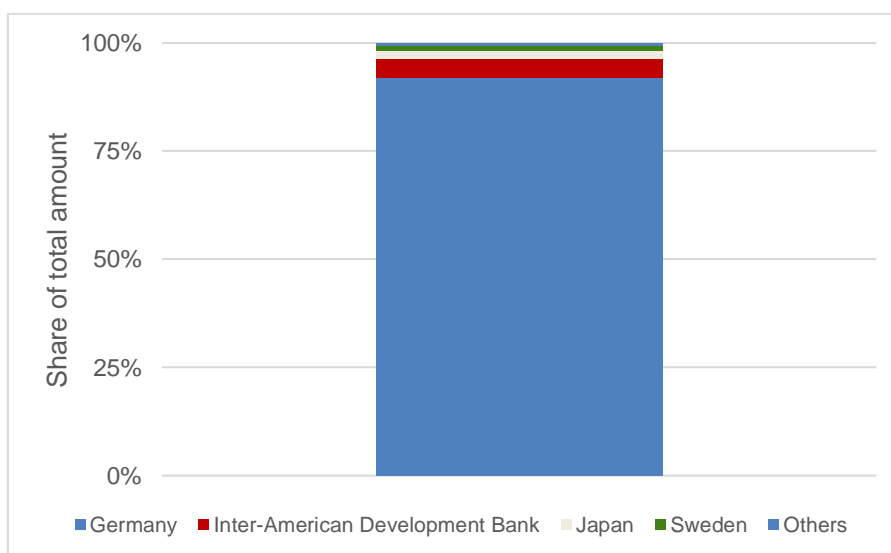
55. Overall, it could be highlighted that given the low-level of assistance highlighted, there are opportunities for CCUS and clean hydrogen projects to receive further financial assistance, but also to diversify the pool of providers, recipient countries, financial instruments, and further target implementation driven projects.

Figure 3.10. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for clean hydrogen projects - Type of providers



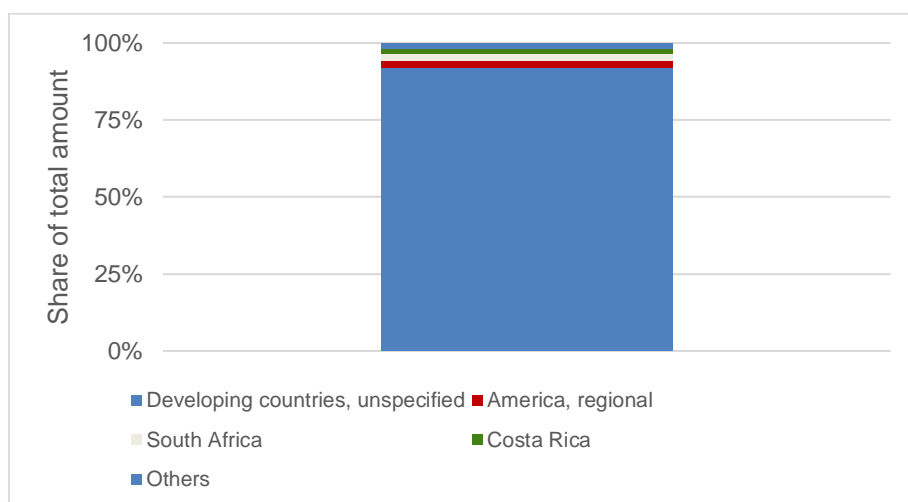
Source: Data analysis from (OECD, 2023^[6])

Figure 3.11. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for clean hydrogen projects - Providers



Source: Data analysis from (OECD, 2023^[6])

Figure 3.12. Cumulative [2000-2021] bilateral and multilateral mitigation-related development finance for clean hydrogen projects - Recipient countries



Source: Data analysis from (OECD, 2023^[6])

Comparison of findings with available estimates

Differences in terms of scope and data availability hinder any direct comparison across existing analyses.

56. Financial flows and related amounts arising from the OECD DAC/CRS database can be compared with data from other existing analyses, provided that the scope covered is similar (see Table 3.2). Available data from existing estimates differ in terms of sector, time period, scope and sources of finance providers, as well as countries' coverage (Table 2.1). As such, data could not be directly compared across sources.

Table 3.2. OECD DAC / CRS database: Reference points for comparison on industry decarbonisation

	OECD DAC / CRS - Climate related development finance dataset	
Scope of finance flows of interest for the mapping	Mitigation-related development commitment finance	
Sources of finance flows of interest for the mapping	Public bilateral and multilateral	
Geography of finance providers	38 countries (almost all developed countries)	
Geography of finance recipients	EMDEs including: LDC (Least Developed Countries), Other LICs (Other Low-Income Countries), LMICs (Lower Middle-Income Countries and Territories), UMICs (Upper Middle-Income Countries and Territories)	
Sectoral coverage	Industry, Mining, Construction	Steel, cement and chemicals
Years covered for the data analysis	2000-2021 (from 2013 for MDBs)	
Amount	USD 12 billion	USD 1.1 billion

Source: (OECD, 2023^[6])

Despite scope differences, some trends are confirmed

57. Despite comparison challenges, the limited focus on the industry sector in general can be underlined in the different analyses.

58. In the OECD analysis on “Climate Finance Provided and Mobilised by Developed Countries between 2016 and 2020”, disaggregated data covering public bilateral and multilateral flows for all sectors (mitigation and adaptation) is available, amounting to USD 295 billion over 2016-2020 (OECD, 2022^[5]). Despite the scope differences with the previous OECD DAC/CRS-based analysis, the limited focus on the industry sector can be equally stressed as the share of the “Industry, Mining and Construction” category in total flows is limited to a few percents.

59. Other estimates arising from the OECD analysis on “Climate Finance Provided and Mobilised by Developed Countries” may refer to an “industry” labelled category (e.g. (OECD, 2023^[16])). However, these amounts cover an aggregation of sectors which go well beyond the hard-to-abate industries (e.g. agriculture, small and medium size enterprises, or pharmaceutical). Indeed, the objective is to provide high-level trends rather than focusing on specific sectors. Bearing in mind this scope difference, any comparison with the amounts highlighted for the steel, cement and chemicals sectors is not relevant.

60. In the Climate Policy Initiative (CPI) tracking of climate finance, available data of USD 9 billion¹⁸ relates to the total for industry, mitigation and adaptation, public bilateral and multilateral finance, public domestic finance, private finance, and with more comprehensive geographical coverage (Climate Policy Initiative, 2023^[8]). Again, despite the difference in scope with the OECD DAC/CRS-based analysis, it is worth noting that the “Industry” category accounts for less than 1% of the total climate related finance flows captured (Climate Policy Initiative, 2023^[8]).

61. In the LeadIT analysis on “the role of IFIs in the transition to low-carbon steel,” available data of cumulative USD 3.4 billion between 2000 and 2021 relates to the financials flows targeting the steel industry and arising from 24 IFIs (Maltais et al., 2022^[9]). These flows are not necessarily climate related (i.e. overall assistance to the steel industry) and have a more comprehensive geographical coverage. The scope and coverage of those of the OECD DAC/CRS-based analysis thus significantly differ. However, the LeadIT analysis confirms that the large majority of IFIs’ investments recorded for the steel sector have not been directed towards disruptive decarbonisation of steel production processes (Maltais et al., 2022^[9]). This confirms the trend identified in the previous OECD DAC/CRS data analysis that the recipient projects have focused on incremental emission reductions so far.

¹⁸ Average of 2-year data: 2021 – 2022.

4 Assistance from funds and IFIs for industry decarbonisation in EMDEs: An overview of existing channels

62. While previous chapter has considered a retrospective approach, this chapter focuses on current financing channels and how the extent to which they provide assistance for industry decarbonisation in EMDEs. It identifies some funds and IFIs for which industry decarbonisation projects are part of their portfolio's scope.

Key findings from the Climate Funds Explorer (NDC Partnership)

Various funds could theoretically provide assistance for industry decarbonisation projects...

63. The Climate Funds Explorer of the NDC Partnership gathers information on around one hundred funds, “which are those defined as relevant for climate finance or those that contribute to achieving climate change mitigation, adaptation, or resilience objectives” (NDC Partnership, 2024_[17]). The detailed review of the characteristics of these funds recorded in the Climate Funds Explorer enabled to identify more than twenty funds which can be applied to industry decarbonisation projects in EMDEs, as summarised in (Table A A.1).

64. Coverage of the industry sector varies:

- Nearly 20% of these funds “closely” consider the industry sector, in the sense that industry is specifically mentioned as one of the targeted sectors. Such funds include for instance the Mitigation Action Facility (MAF) or the Green Climate Fund (GCF).
- Around one third of these funds consider the industry sector, but from a wider perspective. In such cases, the industry sector is closely linked to the objectives or to the wider categories applying to the funds (e.g. innovative technologies, infrastructure, energy efficiency...). Examples of such funds include the Transformative Carbon Asset Facility, the High-Level Technology Fund, or the Eastern Europe Energy Efficiency and Environment Partnership.
- Half of them are transverse funds, namely not sector specific (e.g. the Green Climate Funds or the International Climate Initiative - IKI) and they are associated to an overall purpose of supporting climate goals or sustainable development. While industrial decarbonisation projects could be of relevance for such objectives, the scope coverage of these funds is by nature significantly larger.

65. Another finding regarding the list of funds is that more than half of these funds is administrated by only two entities, namely the Asian Development Bank (ADB) and the World Bank (WB). However, as Multilateral Development Banks (MDBs) are increasingly committing for mitigation-related funding, there could be an opportunity for this pool to be expanded.

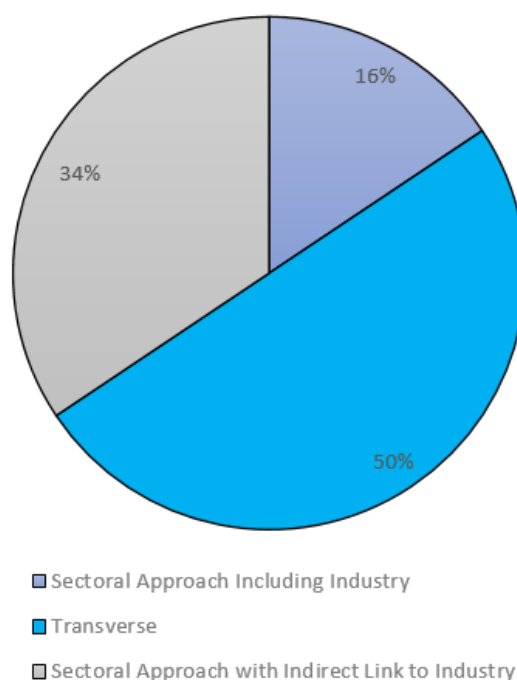
66. It is worth noting that the information available on the related amounts differs in nature depending on the funds. For some funds, available information pertains to committed funds, other funds that have been provided so far, or the initial size of the fund. Therefore, a meaningful total amount could not be drawn for the list of funds identified. However, it is worth noting that some funds refer to an order of magnitude of billions, such as the Green Climate Funds (USD 12 billion financing committed), the International Climate Initiative (IKI, around USD 6.5 billion fund size), the Global Environment Facility (GEF) Trust Fund (which has provided more than USD 21 billion in grants since its inception in 1991) (NDC Partnership, 2024_{17}).

... but no recorded fund is fully dedicated to the industry sector.

67. As previously mentioned, the degree to which industry sector is specifically targeted varies from one fund to another. While a few funds are closely considering the industry sector as part of their portfolio, none of them is fully dedicated to the industry sector. Figure 4.1 highlights that most of the funds which could cover industry have no specific sector focus meaning they are fully transverse (NDC Partnership, 2024_{17}).

68. Transverse and multi-sectoral funds can benefit industry decarbonisation projects, and thus should be considered as a vehicle to support industry decarbonisation. However, industry-targeted funds could further increase opportunities and impact for industrial emission reductions. This could help fostering industry decarbonisation, by ensuring that industry related projects do not compete with projects of a very different nature (energy, transport, land-use...) to access funds. Given the specific challenges underpinning industry financing decarbonisation projects (in particular for emission intensive sub-sectors), the business cases for such projects could be of a disadvantage compared to those of other sectors. Some of these specific challenges include large scale projects, high investments, low commercial maturity of technologies, lack of project pipeline or market barriers.

Figure 4.1. Sectoral focus of funds from the Climate Funds Explorer which could support industry decarbonisation.



Note: The figure above represents the number of climate related funds retrieved from the NDC Partnership database which could support industry decarbonisation, and categorised by those who target a sectoral approach that includes Industry, a sectoral approach but with an indirect link with industry and those that are fully transverse with no specific sector being targeted.

Source: Data analysis from (NDC Partnership, 2024^[17]), as of February 2024.

Review of industry decarbonisation coverage in some selected IFIs and funds

To complement the previous conclusions, a selection of 17 IFIs and funds is analysed with respect to their coverage of industry decarbonisation projects. Table A A.2 This selection was made on the basis of an earlier OECD working paper that explored the focus of IFIs and funds on industry decarbonisation. The working paper highlighted available programs from international financial institutions for industry decarbonisation (Cordonnier and Saygin, 2023^[2]). From this sample of IFIs and funds, almost all of them cover the industry sector in their portfolio in a specific way. In some cases, industry is considered as a dedicated category of projects, whereas in others it is part of a broader portfolio (e.g. industry, mining, quarrying, energy building, cities, industries and appliances...).

69. From a decarbonisation perspective, 70% of the IFIs and funds covering the industry sector in the sample have decarbonisation related projects in their portfolio. For others, the industry projects in most cases relate rather to manufacturing capacity expansions, irrespective of decarbonisation purposes.

70. In terms of the type of decarbonisation projects, available information highlights that around half of the IFIs and funds involved in industry decarbonisation projects are mentioning projects based on breakthrough technologies such as low-emission hydrogen or CCUS. For the other half, decarbonisation projects refer to more conventional options, such as energy efficiency. Finally, it is worth noting that amongst this sample, only the Climate Investment Fund (CIF), and the International Finance Corporation (IFC) are considering building a dedicated fund targeting manufacturing and industry decarbonisation. This supports the finding from the LeadIT analysis on “IFIs and heavy industry decarbonisation in EMDEs”,

which underlines that heavy industry decarbonisation is a nascent and rapidly evolving space (Leadit, 2023^[18]).

Insights from interviews with selected IFIs and funds

71. To inform this mapping, interviews were held with a select sample of IFIs and funds to discuss their portfolios and how they approach industrial decarbonisation. The sample included the African Development Bank (AfDB), the Black Sea Trade and Development Bank (BSTDB), the European Bank for Reconstruction and Development (EBRD), the Global Environment Facility (GEF), the Green Climate Fund (GCF), International Finance Corporation (IFC), the World Bank (WB), and the Asian Development Bank (ADB). These discussions were shaped by a set of six targeted questions¹⁹ aimed at understanding how these institutions portfolio target industry decarbonisation, the type of financial instruments deployed, and challenges associated with funding industrial decarbonisation projects.

72. The findings derived from interviews with the IFIs should be understood as additional findings from the OECD DAC/CRS Database whose trends can be reflected upon further.

Several instruments can be used, the suitability of which depends on each project

73. Most interviewed IFIs and funds stated the use of concessional loans (as the most predominantly used debt instrument) and technical assistance as the most used type of assistance for industry decarbonisation related projects followed by grants. In addition, the majority of IFIs and funds stated that their preferred choice is to deploy a mix of these instruments together and often the use of instruments would be based on a project's specific needs and characteristics such as the size of a project or geographical or political considerations. Previous OECD research shows that a wide array of financing instruments can help create enabling environments for industry decarbonisation,²⁰ yet results from interviews with IFIs show that only a limited number of these tools are currently being deployed (Cordonnier and Saygin, 2023^[2]).

74. For IFIs with a fund specific for industry decarbonisation in EMDEs, the goal is to scale up the use of concessional loans while others rely on blended finance and grants as the main financial instruments for such projects. The use of blended finance is an additional insight provided by the interviews, and not explicitly highlighted in the OECD data on private finance mobilised given that it involves deploying a combination of different instruments. It is also important to note that the blended finance definition of IFIs could be different than of the OECD. Analysing these differences has been left outside of the scope of this report.

75. The listed instruments below in Figure 4.2 highlight those instruments that are being deployed currently and those that IFIs are interested in deploying for future projects. Some of these instruments may have not been highlighted in the DAC/CRS database but come to light when the IFIs and funds interviewed discuss their portfolios in depth.

76. Blended finance is a mix of instruments that is being more commonly deployed by IFIs and funds. The interviews with IFIs and funds show that blended finance is deployed for projects based in EMDEs to support sustainable development in the industrial sector. However, it is important to understand, that these institutions have a different definition of blended finance than the OECD. The OECD defines blended finance as the strategic use of development finance for the mobilisation of additional finance towards

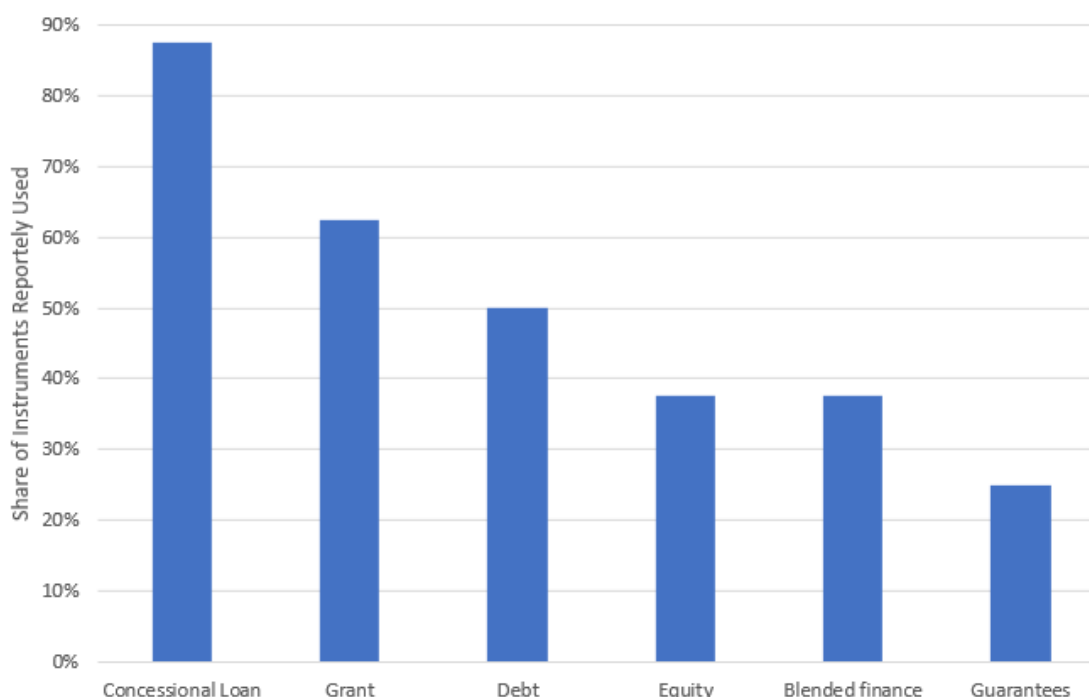
¹⁹ See Table A A.4

²⁰ See reference (Cordonnier and Saygin, 2023^[2]) for further details on financing solutions and de-risking mechanisms for industry decarbonisation projects.

sustainable development in EMDEs (OECD, 2024^[19]). The OECD views blended finance as a financial tool that can attract commercial capital towards projects that increase sustainable development while providing a financial return to investors.

77. In the sample of IFIs interviewed, the use of guarantees²¹ was common. The DAC/CRS database excludes the use of guarantees given that guarantees are categorised as a non-flow operation (OECD, 2023^[6]).

Figure 4.2. Share of interviewed IFIs and funds using the following tools for industry decarbonisation projects



Note: “Debt” refers to the use of debt instruments in a general way as reported by IFIs during the interviews. Blended finance covers a variety of financial instruments which can be tailored to project needs.

Source: OECD analysis from IFIs interviews

While project selection is determined on a case-by-case basis, alignment with IFI’s or fund’s overall regulatory financing framework is a pre-requisite

78. For interviewed IFIs and funds, project selection is often determined on a case-by-case basis. Some would evaluate the impact and scalability the project would have, certain characteristics of industrial assets in the specific EMDE the project would take place in, company and political commitments to decarbonisation where the project would take place and the economic feasibility. Some IFIs pay particular attention to projects that focus on innovative technology development, or energy efficiency measures while others would engage in all projects related to industry and manufacturing in EMDEs, in which they would partake in both greenfield and brownfield investments. Greenfield investments would indicate building new industrial facilities while brownfield investments involve upgrading existing facilities such as improving the energy efficiency of a steel plant. Certain IFIs have regional targets meaning they operate in the largest industrial economies like India or focus project deployment on a particular region like Africa.

²¹ Refers to “IFIs providing guarantees for projects”.

79. The only reported criteria projects had to meet would be an alignment with the IFI's structural framework, regional restrictions or implemented climate focused policies. Some funds mentioned that the criteria for project selection would also depend on weather restrictions are imposed by project partners. For other funds, engaging in a project would depend on if it is scalable and impactful. Some of them also mentioned examples of criteria that would relate to Environmental, Social and Governance (ESG), gender and indigenous considerations. In addition, other funds mentioned that they are not able to provide project-based loans and instead provide corporate loans to steel companies to push ahead with decarbonisation efforts.

There is a growing interest in developing specific funds and programs towards industry decarbonisation in hard-to-abate sectors

80. Developing specific funds and programs towards deep industry decarbonisation is an emerging and rapidly evolving space. When asking the IFIs and funds on the current total amount of funding provided and the volume of dedicated fund to support industry decarbonisation, information provided varied by the specific institution. All agreed that funding allocation for industry related projects can be costly and requires significant investments from a variety of sources. For instance, to reach net-zero by 2050, USD 340 billion in investments for hard-to-abate sectors in EMDEs would be necessary by 2030. Some IFIs discussed the importance of increased access to long-term concessional finance through partners like CIF while others pointed to a decline in funding towards industry, stating that industry funding has lowered significantly since the 2000s and more attention is paid to new clean energy sources like hydrogen. Most industry related projects now tend to focus on enhancing energy efficiency within industry.

81. Majority of the IFIs and funds interviewed have plans to scale up their portfolios to target more industry related decarbonisation projects by working with philanthropic and/or private sector partners. In addition, many are developing blended finance programs that target industry decarbonisation and specific programs dedicated to industry and manufacturing in EMDEs. Some of these programs focus solely within specific regions like Africa or Asia.

A lack of project pipeline and market risks appear as the most critical barriers towards industry decarbonisation projects

82. IFIs and funds interviewed face a variety of barriers when trying to finance industry decarbonisation projects as highlighted in Figure 4.3. There is interest from IFIs and funds in wanting to provide financial assistance but there may be barriers that prevent the offtake of projects that are at times are country specific (e.g. the recipient country may have a weaker currency). Through discussions, seven types of barriers in total were identified. These barriers are financing related (e.g. currency risks and limited access to financing), a company's decarbonisation strategy, policy, infrastructure, technology, a lack of viable projects and market risks. A lack of project pipelines and market risks appear as the most common barriers towards industry decarbonisation projects.

83. Financing barriers constitute disincentives to take on projects in EMDEs, for instance if the recipient country has a weaker currency or if there is a lack of access to financing for industries in general meaning there is not enough monetary capital available to take on large decarbonisation projects. For instance, some IFIs face considerable barriers to provide concessional finance and rely on donor countries or to use and blend funds such as the Climate Investment Funds which can entail a lengthy process.

84. Infrastructure and technology related barriers may be even more pronounced in EMDEs which make it difficult to fund projects focused on expanding the production of alternative fuels or implementing CCUS. These types of projects require both underlying technology and infrastructure development to be successful. Breakthrough technologies also may not be commercially viable as they have lower ranked technology readiness levels (TRL). A lack of risk appetite for investment in technologies with low TRL's

can impact their deployment and their ability to contribute to decarbonisation, especially if a country's policy and regulations do not highlight a clear and long-term commitment to reaching net-zero emissions.

The implementation of clear policy and regulatory frameworks can help create enabling conditions for investors

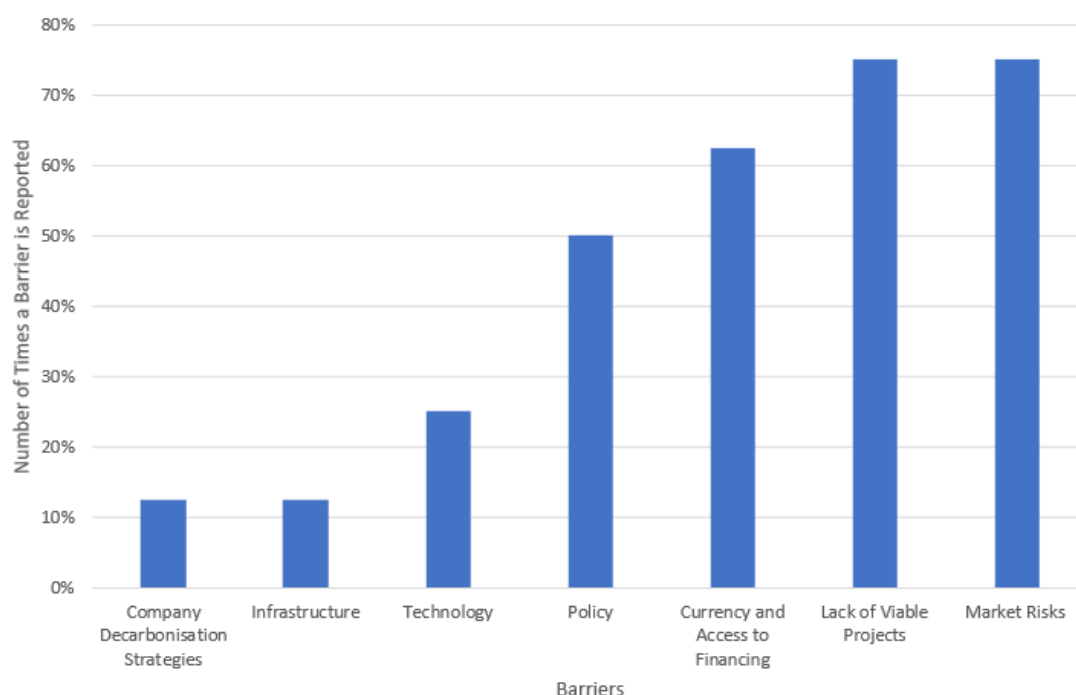
85. The two barriers mentioned the most by IFIs are a lack of viable projects for industry decarbonisation meaning that projects may not be scalable or impactful enough to create an incentive amongst IFIs and partners to engage in, alongside market risks such as the competing price of fossil fuels or the unknown commercial viability of new technologies like CCUS that could help mitigate emissions.

86. Yet, a lack of clear policy signals from the government aiming to reduce emissions within the industrial sectors can also act as a barrier for investment. For instance, misaligned regulatory frameworks that may be in place or a lack of long-term policy commitments that can promote an enabling environment for investments in breakthrough technologies for decarbonisation act as barriers. The findings from the interviews with the IFIs highlight the need to develop long-term policy goals for industry decarbonisation that reflect regional priorities and characteristics. The implementation of long-term policies promoting net-zero goals can also help boost investor confidence and increase the private sector involvement in decarbonisation projects for the steel, cement and chemical industries.

87. Discussions with the IFIs highlight that a lack of long-term company strategy for industry decarbonisation can act also as a barrier if plans for decarbonisation are premature or misaligned. Some companies may only commit to 5-year decarbonisation strategies which creates risk towards investing in long-term decarbonisation projects.

88. Developing a stronger project pipeline with opportunities for scalability, the development of net zero transition policies that are sectoral and country specific and dedicated long-term funding opportunities to increase concessional finance would be options to help IFIs to mitigate the impacts of some of the existing barriers.

Figure 4.3. Reported Barriers that IFIs and Funds Face in Providing Assistance for Industry Decarbonisation Project



Source: OECD analysis from IFIs interviews

Most IFIs and funds raise the need for innovative financing mechanisms to support industrial decarbonisation

89. Majority of the IFIs and funds consider de-risking as a valuable tool for industry decarbonisation specifically through instruments like guarantees. Yet an innovative financing mechanism is the use of sustainability-linked loans as a way to finance industry decarbonisation projects and increase investor confidence.

90. Other financing mechanisms and/or products reported as most adequate for overcoming funding challenges regarding industrial decarbonisation are the use of debt including the specific use of concessional finance, as well as blended finance instruments which are a mix of several financial instruments and tailored to projects and or country contexts. Some IFIs use credit lines when working with private sector parties, and carbon credit programs to help unlock financing and de-risk emission reduction projects in EMDEs.

5 Private finance mobilised for industry decarbonisation in EMDEs

Gaining insights through OECD data on private finance mobilised by official development finance interventions

91. The core objective of technical and financial assistance is to unlock and mobilise private capital since a majority share of the industrial decarbonisation investments aligned with net-zero transition pathways will need to rely on private finance. Thus, to complement previous chapters focusing on public sources of financing, this chapter provides further insights on private finance mobilised for industry decarbonisation in EMDEs. The analysis builds on OECD CRS data on “Private Finance Mobilised by Official Development Finance Interventions”, which takes stock of progress made by development co-operation providers – both bilateral and multilateral – to mobilise private finance in support of sustainable development.²² (OECD, 2024_[11]).

92. In that context, the term “mobilisation” (or leveraging) refers to “the ways in which specific mechanisms stimulate the allocation of additional financial resources to particular objectives; it requires a demonstrable causal link between finance made available for a specific project and the leveraging instrument used” (OECD, 2023_[20]). The leveraging mechanisms covered include syndicated loans, guarantees, shares in collective investment vehicles, direct investment in companies, credit lines, project finance and simple co-financing arrangements. The methodologies for reporting on amounts mobilised are defined instrument by instrument (OECD, 2020_[21]).

93. Consistently with chapter 3, OECD data are leveraged to highlight the extent to which private finance mobilised by official development finance interventions has targeted decarbonisation of the steel, cement and chemicals sectors in EMDEs so far. Available data from 2012 to 2020 provide information on the mitigation related amounts of private finance mobilised for these three sectors aggregated, on the recipient countries, providers and on the leveraging mechanisms used.

94. It is worth noting that the amounts mentioned throughout this chapter should not be compared or summed to the ones presented in chapter 3 (i.e. on mitigation related development finance from public bilateral and multilateral sources). Differences in terms of methodology, type of recorded flows, data granularity or confidentiality constraints of some providers do not allow for any direct comparison between these amounts.

95. However, within their own boundaries, both chapters shed light on the level of coverage of the steel, cement and chemicals sectors and the characteristics of the financial assistance (e.g. concentration in terms of providers or recipient, variety of financing instruments deployed). Therefore, similar trends and/or conclusions arising from these two distinct pieces of analyses can convey a strong signal on how industry decarbonisation has been considered within the development finance landscape so far.

²² [Leveraging private finance for development | OECD](#).

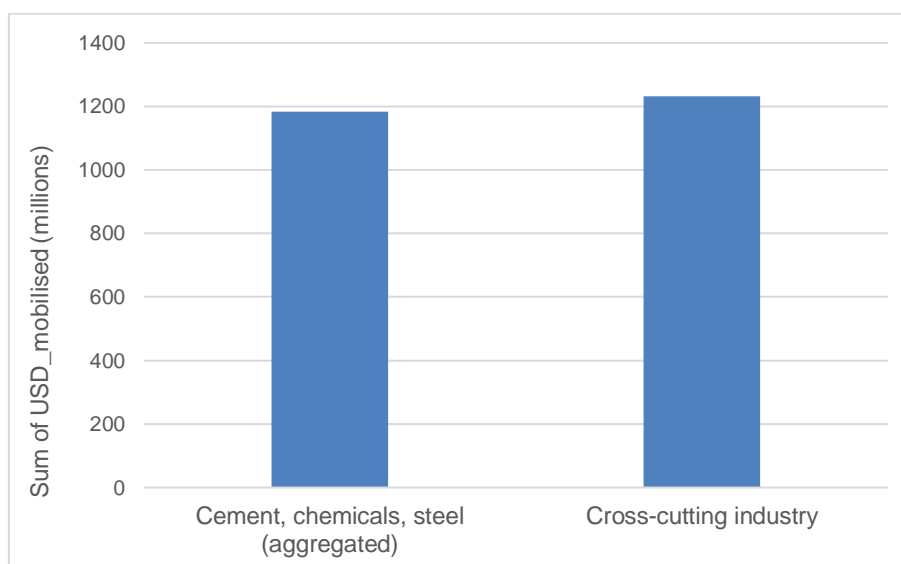
Focus on the steel, cement and chemicals sectors

There is significant room to further mobilise private finance towards industry decarbonisation...

96. Echoing chapter 3, a first overview is presented by including a “cross-cutting industry”²³ category along with the three hard-to-abate sub-sectors of interest.²⁴ This is intended to reflect the fact that mobilised finance arising from this cross-cutting category could have indirectly benefited to the steel, cement and chemicals sectors. However, as this cross-cutting category may have indirectly benefited other sub-sectors too, a deep dive into the steel, cement and chemical sectors is required for further targeted outcomes.

97. The cumulative private finance mobilised for mitigation activities between 2012 and 2020 for the “cross-cutting” industry category amounted to around USD 1.2 billion. For the steel, cement, and chemicals sectors (aggregated), private finance mobilised for mitigation totaled another USD 1.2 billion over the 2012-2020 period (Figure 5.1).

Figure 5.1. Cumulative [2012-2020] mitigation related private finance mobilised for cross-cutting industry and steel, cement, and chemicals sectors



Source: Data analysis from OECD DAC statistics - [OECD Data Explorer • Mobilised private finance for development](#).

98. Private finance mobilised for mitigation in the steel, cement and chemicals sectors together represented a 2018-2020 yearly average of around USD 281 million, namely 2% of the 2018-2020 yearly average for the whole mitigation related private finance mobilised by official development finance interventions (OECD, 2023_[20]). This trend supports the findings pertaining to the mitigation related public development finance: so far, these three sub-sectors have received limited focus.

²³ This “cross-cutting industry” category includes “industrial policy and administration”, “industrial development” and “technological research and development”.

²⁴ Namely basic metal industries, chemicals and fertilisers, cement.

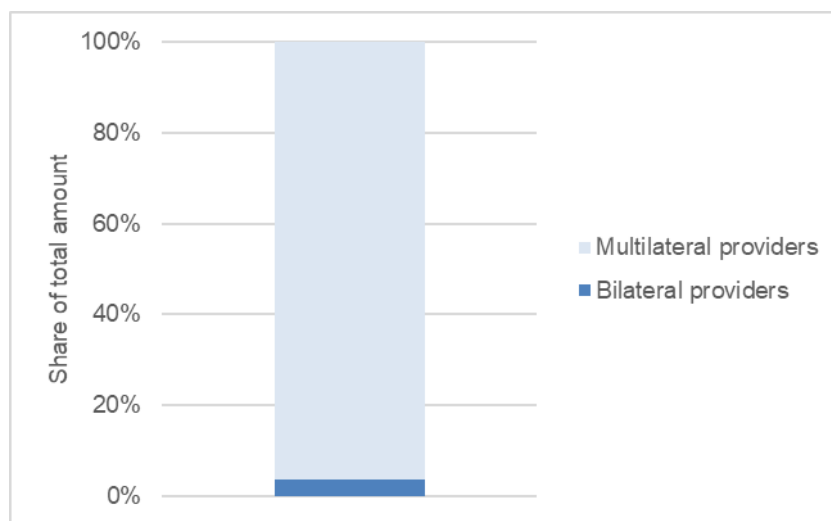
99. When compared to the total private finance mobilised for these three sub-sectors (namely sustainable development in general, not only climate mitigation), mitigation related activities represented 22% of the total.

100. All in all, there is thus still room to significantly increase the share of private finance mobilised for decarbonising the steel, cement and chemicals sectors.

... as well as to tap into a wider range of providers and recipient countries

101. Almost all the total amount mobilised stemmed from multilateral providers (Figure 5.2), and 80% stemmed from three stakeholders²⁵.

Figure 5.2. Cumulative [2012-2020] mitigation related private finance mobilised for the steel, cement and chemicals sectors - Breakdown by providers



Source: Data analysis OECD DAC statistics - [OECD Data Explorer](#) • Mobilised private finance for development.

102. Providers used various leveraging mechanisms, including syndicated loans (around 45% of the total amount mobilised), direct investments in companies and SPVs (25%), co-financing and guarantees (around 15% each) (Figure 5.3). The range of instruments is thus more diversified compared to the one used for mitigation related public development finance.

²⁵ For data confidentiality aspects, multilateral providers are aggregated in the associated Figure 5.2.

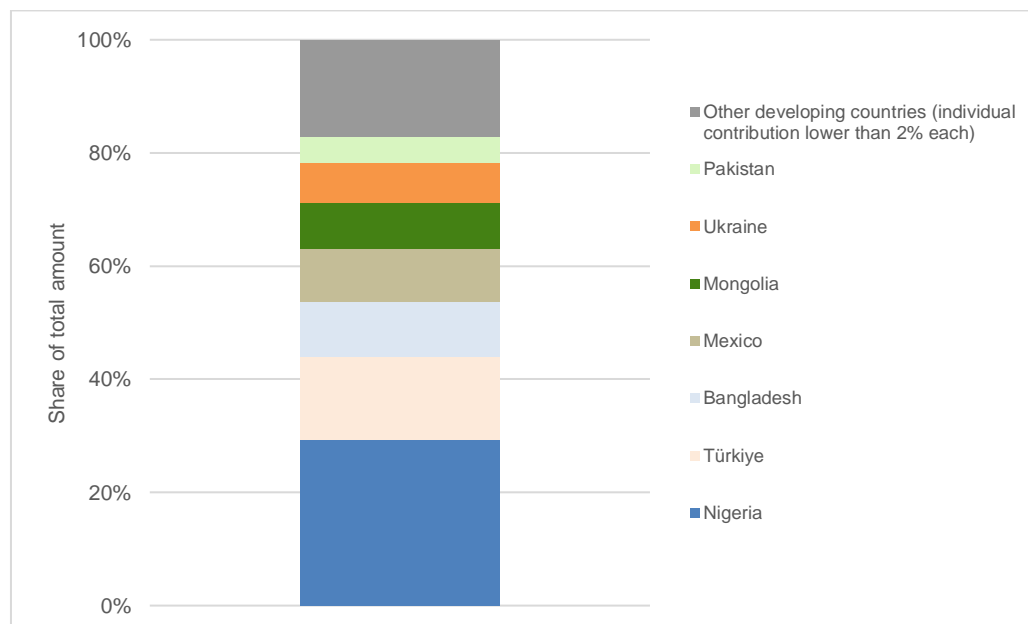
Figure 5.3. Cumulative [2012-2020] mitigation related private finance mobilised for the steel, cement and chemicals sectors - Breakdown by financing instruments



Source: Data analysis from OECD DAC statistics - [OECD Data Explorer • Mobilised private finance for development](#)

103. Main recipient countries were Nigeria (around 30% of the total amount mobilised), Türkiye (15%), Türkiye (15%), Bangladesh (10%), Mexico, Mongolia (around 9% each), and Ukraine (7%) (Figure 5.4).

Figure 5.4. Cumulative [2012-2020] mitigation related private finance mobilised for the steel, cement and chemicals sectors - Breakdown by recipient countries



Source: Data analysis from OECD DAC statistics - [OECD Data Explorer • Mobilised private finance for development](#)

104. The high concentration of providers echoes to the pattern observed for mitigation related public development finance towards the three sub-sectors. Given the high concentration observed, there are opportunities for these sub-sectors to potentially benefit from the other providers that have been recorded for other sectors (i.e. beyond industry).

105. Regarding the pool of recipient countries, the picture is more nuanced. In absolute terms, this pool seems less concentrated than the one referring to mitigation related public development finance for these sectors. However, the targeted recipients do not include major steel, cement and chemicals manufacturing countries (e.g., China, India, Southeast Asia). In this way, there is still considerable space to increase the impact of private finance mobilised on global emission reductions for these sectors.

6 Sources of Financial Assistance and Investments for Industry Decarbonisation beyond the public sector

106. Chapter 6 highlights additional funding and investments opportunities for industry decarbonisation that go beyond the public sector. For this first mapping, analysis is conducted on philanthropies and institutional investors (pension funds in particular). It should be noted that there are other private stakeholders (such as commercial banks) that are key for financing industry decarbonisation and that could be worth exploring for potential future mapping updates.

107. In addition, the level of financial assistance and investments provided by public sector actors such as governments or IFIs, alongside actors beyond the public sector such as philanthropies and institutional investors²⁶ groups should not be compared. It should rather be understood as different opportunity streams to scale up assistance and investments for industry decarbonisation, as well as an opportunity to compare trends on industry decarbonisation related support and/or investments across these different actors.

108. It is also worth highlighting that the role of pension funds and philanthropies towards industry decarbonisation financing is of different nature and of different scale than the one of IFIs or bilateral and multilateral providers. Philanthropies provide financial and technical assistance, via research projects and can influence public and private sector actors to begin investing in industry decarbonisation. As per institutional investors, they have the potential to drive forward investments towards industry decarbonisation. Institutional investors like pension funds also directly invest in industries through their asset portfolios.

109. Monetary flows from philanthropies and institutional investors differ from IFIs, funds or the public finance realm. For instance, philanthropies provide assistance to projects based in EMDEs through grants that can be re-granted to different actors e.g., universities, or NGOs. Institutional investors particularly pension funds invest in companies through domestic or foreign equities.

110. To draw a landscape and understand the dynamics from philanthropies and institutional investors, a global assessment is highlighted in this chapter without limiting necessarily to EMDEs. The assessment conducted for this mapping report is based on available data collected from philanthropies, pension funds and investor groups. Available data from these sources also varied which created information gaps on asset and grant portfolios. Data granularity from actors beyond public sources remains scarce.

111. For the institutional investors analysis similar data constraints have been highlighted in the TOSSD Data Pilot Study on institutional investors such as pension funds. The TOSSD Data Pilot Study shows the

²⁶ This group of investors includes various institutions, such as pension funds, insurance companies and investment funds.

need for increased data collection on the activities of institutional investors in EMDEs and their respective contributions to the SDGs (TOSSD, 2023^[22]). Overall, the data received from institutional investors varied in detail creating information gaps (TOSSD, 2023^[22]).

Institutional Investors involvement in industry decarbonisation: 28 Pension funds and how they invest in manufacturing industry

There is significant potential for institutional investors to contribute to financing industry decarbonisation in EMDEs

112. Institutional investors have the ability to provide long-term financing in EMDEs to contribute to sustainable development given their assets value (over USD 100 trillion in assets in 2019 in OECD countries alone (OECD, 2021^[23]).

113. A shift of only 3.7% of the USD 100 trillion of assets held globally by institutional investors towards sustainable activities would be sufficient to fill the USD 3.7 trillion gap needed to finance the SDGs (OECD, 2021^[23]).

114. According to a previous OECD survey, institutional investors prefer to invest in stable and low risk markets with only a small share of assets allocated to EMDEs. Investments tend to flow towards middle-income economies where there is a well-developed investment climate and are in the form of asset classes marked by a relatively low-risk profile and predictable returns (OECD, 2021^[23]). Complimentary to this finding, investments in green infrastructure by institutional investors, are channelled within their regions of domicile (OECD, 2020^[24]). For instance, European pension funds are the most active within their own regions (OECD, 2020^[24]). In addition, cross-border investments typically occur when assets are located in mature markets, which can be a result of policy environments that enable and attract institutional investments in infrastructure yet there is still potential for increasing cross-border investment flows into low-carbon assets (OECD, 2020^[24]). For instance, research on cross-border investments for low carbon infrastructure shows that there is ample room for institutional investors to scale up and shift infrastructure investments in low carbon projects as there are no regulatory policies that would prevent this (OECD, 2024^[25]).

115. This report highlights holdings of institutional investors based on data retrieved from pension funds and investor groups, specifically the Asia Investor Group on Climate Change (AIGCC).

Pension funds have holdings in manufacturing companies...

116. 28 pension funds were analysed derived from a sample collected from the OECD's Development Assistance Committee's (DAC) "Mobilising institutional investors for financing sustainable development" report and the Thinking Ahead Institute, Top 300 Pension Funds (OECD, 2021^[23]), (Thinking Ahead Institute, 2023^[26]). Three-quarters of the pension funds listed (21 out of the sample of 28) invest in EMDEs which is why they are selected for this mapping (OECD, 2021^[23]). The remainder were selected given that they are some of the biggest pension funds in terms of the assets under management. From these 28 pension funds identified, 6 provided public information on their list of holdings which included corporate bonds, and equities both private, foreign, and domestic. The list of pension funds analysed for this report are listed in the Table A A.5. All information collected on pension funds such as the information on their asset holdings, investment portfolios and strategies were collected via their websites and public reports.

117. Data granularity on the pension funds varied as some list their assets while others do not. In the case, where assets are listed for public use, the data shows that it is mostly foreign and domestic equities that reflect investments in steel, cement, and chemical industries. Foreign equities reflect more investments in these industry subgroups than domestic equities.

118. Based on the sample, foreign equities in steel, cement, and chemical industries tend to be in companies located in East Asia like the People's Republic of China (hereafter "China"), Korea, Japan, India and ASEAN countries like Thailand and Malaysia. Outside of Asia, investments in these industry subgroups tend to be in Saudi Arabia.

119. In addition, this sample shows that, domestic and private equities consist of a smaller portion of investments in steel, cement and chemical industries in comparison to foreign equities. When pension funds publicly posted their domestic equities in these three industry subgroups, the companies that they had holdings in would either be in Europe, and the US.

120. Out of all three industry subgroups, investments in chemical industries were most common across both domestic and foreign equities.

... however, data does not specify if investments are related to decarbonisation

121. This sample and the related data limitations for this mapping did not allow to conclude if the investments made by pension funds in industrial companies are driven with the purpose of helping these companies or industry subgroups decarbonise. However, the pension funds analysed do account for ESG approaches within their investment practices. ESG factors are playing an increasing role in the investment decisions of many institutional investors and other market players and each actor often has different strategies, datasets, and methods in how they integrate ESG in their portfolio (OECD, 2020^[27]). As a result, ESG principles could be applied to support investments in decarbonisation of steel, cement and chemical companies.

Climate related initiatives are being shaped by institutional investors which indirectly can influence industry decarbonisation

122. Based on desk research and discussions with stakeholders, institutional investors that are part of the Asia Investor Group on Climate Change investor network, are publicly recognising climate as a material risk, but also an opportunity for increased returns (Asia Investor Group on Climate Change, 2024^[28]). The AIGCC found that institutional investors are acting on climate change through five focus areas: governance, corporate engagement, disclosure, policy and advocacy (Asia Investor Group on Climate Change, 2024^[28]).

123. To implement a governance structure conducive to addressing climate change, Asian institutional investors are putting in place climate-related investment policies and climate action plans (Asia Investor Group on Climate Change, 2024^[28]). In addition, to facilitate a green investment environment, investors are beginning to set climate targets which include but are not limited to net zero targets as a part of their portfolios, climate solutions targets, and approaches and policies on fossil fuels (Asia Investor Group on Climate Change, 2024^[28]) (Box 6.1).

124. Corporate engagement initiatives on climate change include the Climate Action 100+ as described in further detail below, considerations in proxy voting policies and the development of strategies that help drive corporates to align with net zero (Asia Investor Group on Climate Change, 2024^[28]). In addition, corporate disclosures²⁷ are encouraged to take a climate friendly approach. While maintaining transparency, financial disclosures can show carbon emissions and physical climate risks via risk assessments on portfolios.

125. Investors in Asia are also increasing their engagement in climate policy advocacy across the region and engaging with governments and policy makers to unlock opportunities for climate action such as an

²⁷ As an example, the "[Partnership to Strengthen Transparency for co-Innovation](#)" in ASEAN, which provides technical assistance related to emissions reporting to both the private and public sectors helps to promote corporate disclosures.

improved approach to carbon pricing and greater funding towards low-carbon technologies (Asia Investor Group on Climate Change, 2024^[28]).

126. The Climate Action 100+ is an investor-led initiative set up in 2017 and coordinated by five investor networks: the AIGCC, Ceres, Investor Group on Climate Change (IGCC), Institutional Investors Group on Climate Change (IIGCC) and Principles for Responsible Investment (PRI) and is supported by a global steering committee (Climate Action 100+, 2024^[29]). The goal of the initiative is to help ensure that the world's largest corporate greenhouse gas emitters act on climate change in order to mitigate financial risk and to maximise the long-term value of assets (Climate Action 100+, 2024^[29]). The initiative asks companies to implement a governance framework that displays the boards accountability and oversight of climate change risk, reduce emissions across the value chain, and increase engagement with stakeholders like policymakers to address sectoral transition barriers, while providing corporate disclosures (Climate Action 100+, 2024^[30]). In addition, many of the companies partaking in the initiative are implementing transition plans with robust decarbonisation targets that are evaluated for their effectiveness.

Box 6.1. How institutional investors are driving their portfolios towards net-zero emissions

Reaching the net-zero emissions requires not only scaling up finance for climate solutions, but also redirecting finance away from activities hindering climate objectives and embedding climate considerations in all investment and financing decisions (Jachnik, Mirabile and Dobrinevski, 2019^[31]). In this context, a growing landscape of voluntary coalitions, frameworks and methodologies promoting the alignment of finance with the temperature goal of the Paris Agreement has emerged (Noels and Jachnik, 2022^[32]).

These initiatives may perform multiple and evolving roles over time, but typically aim to strengthen voluntary climate action by investors. Investor coalitions may support multiple frameworks, or gradually develop their own framework. Sometimes, frameworks progressively dive into further technical details, thereby turning into methodologies.

Frameworks, including those designed by coalitions such as IIGCC, agree that institutional investors should disclose current actions and targets relating to emissions, portfolio construction practices, engagement practices, and strategy and governance (OECD, 2023^[33]). Comparable disclosure on most of those elements are currently lacking. Consequently, evidence on the effectiveness of investors actions to reduce their financed emissions, including in the industrial sector, is limited.

Investors are increasingly looking for corporate climate targets, transition plans and related climate alignment assessments of those targets and plans, to underpin their climate considerations in portfolio construction and engagement practices. Such assessments, which are often done for different sectoral segments of investors' portfolios, rely heavily on climate scenarios and sectoral emissions pathways (Noels et al., 2023^[34]). By gaining insights into the characteristics and assumptions of scenarios, investors can assess uncertainties and sensitivities if certain scenario assumptions do not materialise and enhance their engagement practices and investment priorities.

As climate scenarios were not initially designed with their use in the financial sector in mind, opportunities remain to improve their design and use to be more impactful in climate-related analyses used by investors, and to prevent possible unwanted portfolio allocation implications, including risks of carbon lock in (Noels et al., 2023^[34]). For example, while scenario providers tend to model and disclose emissions pathways for cement, steel and chemical sectors, granular pathway modelling or disclosure for other high-emitting industrial subsectors commonly found in financial portfolios are still missing. Moreover, investors also rely on non-emissions variables provided by scenarios as reference points for complementary metrics, for example relating to output or technology development. However, modelling and disclosure of those is still limited for several large industrial sectors.

Climate-related initiatives are supporting the implementation of decarbonisation strategies in companies

127. Bluescope Steel LTD. is an Australian steel company that four pension funds have holdings in and is also part of the Climate Action 100+ initiative. BlueScope Steel LTD, has manufacturing operations in Australia, New Zealand, China, the Pacific Islands, Thailand, Indonesia, Vietnam and Malaysia, India alongside businesses in North America such as North Star BlueScope Steel (North Star) and BlueScope Recycling and Materials (BRM) (Bluescope Steel, 2024^[35]).

128. The company has an ambition to achieve net zero GHG emissions by 2050 or sooner by reducing 95% of its Scope 1, 2 and 3 emissions, through the implementation of a corporate decarbonisation strategy (Climate Action 100+, 2024^[36]). Such strategy provides a pathway forward to meet GHG reduction targets

and identifies a set of actions that will be taken to achieve reduction targets by 2050 for scope 1, 2 and 3 emissions (Climate Action 100+, 2024^[36]).

129. Another example of climate related initiatives from institutional investors comes from the Danica Pension, one of the largest pension funds in Denmark with assets worth DKK 450 billion (Principles for Responsible Investment, 2023^[37]).

130. Danica is a part of the Net-Zero Owner Alliance Target Setting Protocol that supports the implementation sector targets for decarbonisation that can be translated into an investment strategy suitable across portfolios and asset classes (Principles for Responsible Investment, 2023^[37]) Danica is committed to being carbon neutral by 2050 by setting intensity-based sectoral decarbonisation targets covering priority sectors like energy, utilities, materials, transport, steel and cement (Principles for Responsible Investment, 2023^[37]). To support the implementation of sector targets, Danica maps their existing portfolio holdings to identify high emitting sectors, and companies that contributed 80% of sectoral emissions using available climate data from multiple sources to evaluate their intensity against the required 2025 intensity levels, while also conducting a quarterly progress review to track portfolio decarbonisation progress (Principles for Responsible Investment, 2023^[37]).

Box 6.2. The role of transition finance in facilitating industry decarbonisation

Transition finance has grown in importance over recent years, with several jurisdictions and market actors presenting their own approaches to defining transition investment, such as through developing transition taxonomies, standards for disclosure on transition plans and technology roadmaps. Transition finance, as a concept, does not have a definition that is agreed by everyone. Given the plurality of actors operating in this space, existing definitions of transition finance differ not only in the stringency and granularity of their eligibility criteria, but also in how and where those criteria apply. For example, some standards apply at the level of an economic activity whereas others are relevant to entities (e.g. corporates) or financial instruments (e.g. transition bonds or sustainability-linked instruments).

At the same time, several core concepts in transition finance are shared across a range of market actors and jurisdictions. Transition finance is intended to benefit:

- high-emitting industries and activities (such as steel, cement and chemicals sectors), where zero- or near-zero emission substitutes are not yet fully (economically or technologically) feasible, but
- where entities can reasonably be expected to reach net zero in the future, based on a long-term, credible climate transition plan.

Transition finance focuses on the dynamic and *forward-looking* process of becoming “green” or sustainable at a pre-defined future point in time, rather than relying only on a *point-in-time* assessment of what is already “green” and sustainable – which is a core feature of green and sustainable finance.

Recent years have witnessed increased momentum on entity-focused approaches on corporate transition plans and related corporate climate disclosures. This likely stems from the clear and alarming evidence that despite the wide awareness on the risks that climate change poses to the economy and financial system, the development and disclosure of credible corporate climate transition plans has been very limited and varied to date. For this reason, as well as to address potential risks of greenwashing due to the lack of common definitions what constitutes a “transition” activity, the OECD Guidance on Transition Finance sets out 10 key elements of credible corporate climate transition plans, which can form the basis for transition finance transactions (OECD, 2022^[38])

The OECD Guidance identifies carbon lock-in as a key risk in transition finance. Carbon lock-in can arise when transition finance flows to assets or technologies that present a marginal improvement but are overall still emission-intensive and long-lived. This is a particularly relevant risk for corporates in heavy industry sectors since industrial facilities are long-lived and capital-intensive assets. For example, the IEA estimates that 90% of steelmaking and 80% of cement production capacity in the EU (and approximately the same share in the US) is more than 20 years old (IEA, 2022^[39]). This presents a window of opportunity to ensure that plants are retrofitted with near-zero emission technologies or replaced with plants that have the technical requirements to enable future retrofits.

Carbon lock-in risk may create reluctance among financiers, investors, and corporates to engage in transition investments, for fear that they could be perceived as greenwashing. Existing approaches and policy frameworks for transition finance emphasise the need to avoid carbon lock-in, but largely do not set clear guidance or criteria on how to do so. To address this, the OECD proposes several ways to help to prevent carbon lock-in in transition finance, such as taking a long-term prospective when assessing technological and economic feasibility as part of eligibility criteria for transition finance (OECD, 2023^[40]).

Source: (OECD, 2022^[38]), (IEA, 2022^[39]), (OECD, 2023^[40])

Philanthropies' assistance for industry decarbonisation: where do we stand?

Funding towards industrial decarbonisation is growing but still remains low compared to other sectors

131. Currently, funding from philanthropies towards industry decarbonisation is growing whilst there is potential in their role to further promote industry decarbonisation. Philanthropies are a private and external type of donor able to collaborate with foundations in EMDEs that can continue to drive forward change.

132. The ClimateWorks report, "*The Funding Trends 2023: Climate Change and Mitigation Philanthropy*" shows that philanthropic grants targeting climate change mitigation towards the industry sector is significantly lower than for other sectors like transportation or clean electricity (Desanlis et al., 2023_[12]). For instance, according to the ClimateWorks Foundation annual Philanthropic Trends report, industry covers less than 3% of climate-related funding from philanthropies (Desanlis et al., 2023_[12]).

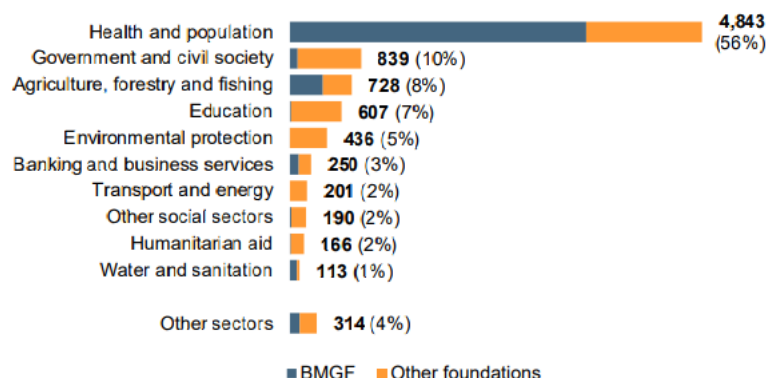
133. Based on the ClimateWorks report, between 2018 and 2022 a yearly average of USD 60 million was provided to industry while other sectors and strategies like clean electricity received more assistance in the order of USD 260 million (Desanlis et al., 2023_[12]). Within the regions that did receive grants targeting industry, the U.S. and Canada received the highest amount of funding at an estimated USD 35 million in 2022 representing more than one third of the total amount directed towards industry (Desanlis et al., 2023_[12]).

134. Based on the sample of grants selected for this mapping, Asia, the European Union, and United States received the highest number of grants. One similar conclusion that can be drawn with the ClimateWorks research and this mapping, is that the United States is one country that typically receives a significant portion of financial assistance towards industry but also in general for climate change mitigation.

135. When comparing results from the ClimateWorks report that covers a broader range of philanthropies with research from the OECD's Development Assistance Committee 2023 report, "*Private philanthropy for sustainable development, 2018-20: Data*", it remains consistent that the industry sector is one of the least funded sectors by philanthropies (OECD, 2023_[41]). This finding is highlighted in the column "other sectors" consisting of 4% of distribution (OECD, 2023_[41]). The column labelled "other sectors" also consists of sectors like social protection, employment creation, housing, communication etc. As a result, the industry sector shares this 4% distribution amongst many other subsectors, indicating that funding toward industry solely is actually much lower than 4%, Figure 6.1 (OECD, 2023_[41]).

136. Research from the OECD and ClimateWorks support the conclusions in this mapping report; industry decarbonisation is less funded than other sectors that also target climate change mitigation.

Figure 6.1. Sectoral distribution of private philanthropy, 2018-20 average, USD million, 2020



Note: Other social sectors include mainly social protection, employment creation, housing. Other sectors mainly include communications, industry, tourism, trade multisector, development awareness raising in provider countries and activities with unspecified sectoral distribution. Core contributions to Gavi, the Vaccine Alliance and the Global Fund to Fight AIDS, Tuberculosis and Malaria by the BMGF are included under the health and population sector.

Source: (OECD, 2023^[41])

Philanthropies can boost public and private interest in industry decarbonisation by issuing grants to innovative projects

137. Findings from interviews with representatives from philanthropies emphasise the importance of increasing dialogue across stakeholder groups and the importance of industry decarbonisation. Philanthropies consider their grants to have a domino effect meaning their projects can influence public and private sector actors to begin investing in industry decarbonisation.

138. When funding industry or climate transition related projects philanthropies tend to use a variety of tools to push forward industry decarbonisation projects. Philanthropies deploy grants, technical assistance, roadmaps and policy development for climate transition and industry related projects. The thematic areas for which projects received grants are dependent on the region. For instance, one philanthropy reported that grants issued by them for projects based in Europe typically target carbon adjustment mechanisms while in Asia, technical roadmaps are popular. In general, philanthropies rely heavily on their partnerships with NGOs to push forth technical assistance programs.

A deep dive into philanthropies grant portfolios

139. To understand how and if philanthropies target industrial decarbonisation within their portfolios, a complementary bottom-up analysis highlights a sample of 41 philanthropic grants and programs (Table A A.3). The grant selection was based on the years 2020-2023. Grants issued prior to fiscal year 2020 were not selected in this analysis in order to reflect the most recent grants and projects in decarbonisation.

140. The sample was developed by looking at the philanthropies listed in the OECD DAC 2023 report, “Private philanthropy for sustainable development, 2018-20: Data,” the DAC/CRS database and a search of grant portfolios with dedicated funding towards sustainable development, climate change, industry decarbonisation and clean innovative technologies (OECD, 2023^[6]) (OECD, 2023^[41]). Within the sample collection, there was bias to search for philanthropies with decarbonisation and more specifically industry decarbonisation initiatives within their existing grant portfolio. Grants were categorised as fully transverse, indirectly related to industry decarbonisation, or directly related through the inclusion of industry as a target

sector. Grants were not selected if they did not mention industry, decarbonisation, or technology development that would support decarbonisation.

Tracking the flow of grants is challenging as often the grantee will re-grant fundings to other actors

141. Often grants issued by philanthropies go to other foundations, or research organisations making it challenging to track the monetary flow of grants. For instance, in some grants provided by the William and Flora Hewlett Foundation, the guarantee is a research institution like Resources for the Future (RFF) or the India Energy Program at the Lawrence Berkeley National Laboratory (LBNL). For these grants, the money would flow directly to them to execute a research endeavour.

142. In other cases, the flow of monetary grants from philanthropies is less clear due to the probability of additional actors receiving the grant. For instance, the Childrens Investment Foundation Fund (CIFF) provides funding to international organisations, or other philanthropies like the European Climate Foundation (ECF). Most likely the ECF re-grants the received funding from CIFF to other national level foundations. The grants being distributed through a variety of channels creates a challenge in tracking the financial flow over time and would require more information than what is currently available on the grant portfolio databases of philanthropies, as highlighted in Figure 6.2. Given that this information availability is limited, it was not accounted for in the analysis provided in this mapping.

Figure 6.2. Philanthropic Financial Flows and The Chain of Actors that Receive Grants



Note: The flow chart below depicts this value of chain of actors that may receive grants from philanthropies.

Data scarcity creates challenges in assessing industry decarbonisation coverage

143. Data availability and granularity varied across philanthropies. Some philanthropies provided more public information and descriptions on their grant portfolios than others, which creates challenges in drawing conclusions especially for assessing the total amount of funding allocated to industry decarbonisation. Philanthropies are not required to disclose information concerning their grant portfolios, yet such data could provide additional insights into their role in supporting industry decarbonisation.

144. Across the philanthropies that did provide information on the purpose of the grants, there were no identified demonstration projects aimed at decarbonising industrial steel or cement plants. Instead, these grants focused for instance on a market-based approach to support the introduction of green steel or unabated coal-fired steel projects, and/or policy related initiatives to develop regulations for industry partners, the deployment of clean technologies to decarbonise industries via clean hydrogen, or research-

based initiatives. The detailed review of the characteristics of all grant opportunities concerning decarbonisation more generally and specific to industry is summarised in Table A A.3.

Grants targeting industry decarbonisation tend to be directed to Asia

145. From the grants selected for this assessment, most of them did not provide information on location of recipients/ projects. This creates challenges in assessing whether grants focus more on EMDEs than developed economies. However, based on the grants that did provide information on the location, non-member OECD countries/ EMDEs received the most grant opportunities. In particular, China received the most grant opportunities across the non-member OECD countries, through projects focused on the decarbonisation of steel and agriculture sectors, accelerating the clean energy transition and developing decarbonisation roadmaps, and increasing climate finance for clean energy/ emission reducing technologies.

146. Regionally, Asia, the European Union and North America received the largest amount of grants either directed or closely related to Industry decarbonisation. In the EU, grants were targeted to the beneficiary, the European Climate Foundation to advance industrial decarbonisation.

Box 6.3. Detailed Review of Philanthropies Portfolios Targeting Industry Decarbonisation

The 41 grant opportunities selected reflect a total of USD 205 million, but only 56% if these grants targeted industry

From the sample of 41 grants, 23 grant opportunities (56% of the listed grants) targeted industry decarbonisation either directly or indirectly (i.e. through the use of innovative technologies), which equates to USD 48 million.

Across all the grants identified the total amount from philanthropies was estimated at roughly USD 205 million globally between 2020 and 2023. The total amount of philanthropic funding targeted to industry decarbonisation either directly or non-directly equates to around USD 48 million. All grants were converted into USD if shown initially in euros. This number is a ball-park assumption given that 13% of the identified grants relevant for the mapping did not provide any information on grant size or funding allocations. Based on the sample of philanthropies identified for this mapping on average between 2020-2023, USD 12 million dollars a year is dedicated towards industrial decarbonisation.

The William and Flora Hewlitt Foundation and Childrens Investment Fund Foundation contribute significantly to industry decarbonisation projects

Two philanthropies issued the most grants dedicated to industry decarbonisation: the William & Flora Hewlitt Foundation, and the Children's Investment Fund. Their portfolio comprised of funding opportunities towards projects and foundations that would either solely work on industrial decarbonisation or would closely consider industrial decarbonisation alongside other sectors globally.

Grants targeting industrial decarbonisation from philanthropies tend to be worth USD 1 million and above

Over half of the grants that target industry decarbonisation either directly or indirectly were worth USD 1 million and above. The grants with the highest amount of funding include the CIFF's USD 17 million grant towards, accelerating EU industrial decarbonisation and the Bezos Earth Fund USD 12.5 million grant towards creating markets for climate-safe cement and steel. Both grants target developed regions meaning that individual grants towards EMDEs tend to be smaller. However, this sample shows that even though philanthropic grants that target EMDE's are lower in dollar amount, there are more grants opportunities that are targeting EMDE's than developed regions.

Regions that philanthropies target vary, but most of them target EMDEs

Across the philanthropic grants that targeted industry either directly or indirectly, 33% targeted non-OECD member countries (China and India). 11% targeted OECD member countries (U.S and Germany), 22% targeted specific regions (EU and Asia), 6% reflect a global focus and 33% of grants provided no information on the country or regional target.

More generally, in the Asia-Pacific region philanthropies are providing assistance to a variety of industrial decarbonisation initiatives through just energy transition goals to help decarbonise energy production and increase renewable energy use (World Economic Forum, 2023^[42]).

Philanthropies are helping to drive desires to decarbonise high emitting regions to support the transition to low carbon and renewables in Asia. For instance, to support the closing of coal plants, philanthropies can provide assistance to help quantify and monetise emission avoidance and build a business case for further mobilisation of capital to support the closing of plants (World Economic Forum, 2023^[42]).

7 Conclusions

Wrapping-up on emerging trends

147. This first mapping of financial and technical assistance to industry decarbonisation in EMDEs reveals several trends and findings.

Cross-cutting data challenges

148. Available data on financial and technical assistance for industry decarbonisation in EMDEs are scattered and scarce. Data granularity at sectoral level, data transparency and confidentiality aspects constitute further challenges for establishing such a mapping. In addition, differences in terms of scope or methodology may hinder any direct comparison across existing data or analyses. As such, there is currently no single source of data that captures the full scope of financing assistance for industry decarbonisation in EMDEs.

Public bilateral and multilateral assistance

149. The OECD DAC/CRS data suggest that public bilateral and multilateral assistance targeting industry decarbonisation has been overlooked over the last two decades. While accounting for 70% of global industry's CO₂ emissions, only about USD 1 billion was targeted towards decarbonisation of the cement, chemical and steel sectors between 2000 and 2021. This represented less than 1% of the total mitigation-related development finance across all sectors (i.e., beyond industry) recorded under the same period.

150. The level of financial assistance quantified cannot be directly compared with the total global investments required to put the industry sector on a net-zero pathway. Indeed, the estimate highlighted above refers to specific sources of financial assistance and covers specific industry sub-sectors, in EMDEs. Additionally, a large share of the total required investments in EMDEs is expected to be financed from private sources (IEA, 2021^[43]). Nevertheless, the order of magnitude suggests that the current levels of financial assistance for industry decarbonisation in EMDEs are far from the levels required to mobilise the investments for a net-zero industry.

151. Furthermore, financial flows targeting the steel, cement and chemicals sectors would benefit from being more diversified. Mitigation-related financial flows recorded for these three sectors are characterised by a limited pool of providers, recipients, and types of financing instruments (typically debt). There are thus opportunities for these sub-sectors to potentially benefit from other providers that have been recorded for other sectors, as well from a variety of instruments. In terms of recipients, there is equally room for targeting additional countries, especially in regions which face the unique challenge of growing while decarbonising their industry.

152. The data available further suggest that, so far, recipient projects have focused on incremental emission reductions rather than on the deployment of disruptive technologies. Available information highlights that these projects focused on improving energy efficiency, circular economy approaches, and waste management. Meanwhile, financial flows directed to cross-cutting breakthrough technologies such as CCUS and clean hydrogen have been limited. Equally, there are opportunities for CCUS and clean

hydrogen projects to diversify the pool of financial providers, recipients, financial instruments, and further target projects that drive implementation.

Existing funds and IFIs programs

153. Assessment of Climate Funds Explorer from NDC Partnership shows that there are various funds available that can support industry decarbonisation projects. However, few operating funds are currently closely targeting the industry sector, and none of them are fully dedicated to industry decarbonisation. In fact, most of the funds that could cover industry have no specific sector focus, meaning they are fully transverse. While transverse and multi-sectoral funds can benefit industry decarbonisation projects, targeted funds could further increase opportunities and impact for industrial emission reductions. This could help to foster industry decarbonisation, by ensuring that industry-related projects do not compete with projects of a very different nature (energy, transport, land-use...) to access funds. Given the specific challenges that underpin financing industry decarbonisation projects (in particular for emission intensive sub-sectors), the business case for such projects could be of a disadvantage compared to those of other sectors.

154. Interviews with selected IFIs and funds confirmed their growing interest in developing specific programs towards industry decarbonisation. The findings from the interviews highlight that multiple financing instruments could be leveraged for decarbonisation projects, the suitability of which depends on each project. The respondents further highlighted that long-term policy and regulatory frameworks towards net-zero are essential to give clear signals and create enabling conditions for investors. Crucially, lack of a pipeline of projects and market risks appear as the most critical barriers for industry decarbonisation projects.

155. Most IFIs and funds interviewed consider de-risking instruments as a valuable tool for industry decarbonisation projects. Financing mechanisms and/or products reported as most for overcoming the funding challenges for industrial decarbonisation are the use of debt and in particular concessional finance, as well as blended finance. Credit lines and carbon credit programs were also mentioned to help unlock financing and de-risk projects in EMDEs.

Private finance mobilised

156. The OECD DAC/CRS data suggests that there is significant room to further mobilise private finance towards industry decarbonisation in EMDEs. Between 2012 and 2020, around USD 1.2 billion was mobilised for the steel, cement and chemicals sectors together. This represents a 2018-2020 yearly average of around USD 281 million, namely 2% of the 2018-2020 yearly average for the whole mitigation-related private finance mobilised by official development finance interventions. This trend supports the findings pertaining to the mitigation related public development finance: so far, these three sub-sectors have received limited focus.

157. As for the conclusion on public bilateral and multilateral assistance – and the limitations mentioned for direct comparison on the amounts - the order of magnitude identified in terms of annual private finance mobilised is several orders of magnitude lower than what is required to put the industry sector on a net-zero pathway.

158. In addition, there is considerable space to tap into a wider range of providers and recipient countries. Given the high concentration of providers observed, there are opportunities for these sub-sectors to potentially benefit from a more varied set of providers that have been recorded for other sectors (i.e., beyond industry). While the pool of recipient countries does not seem as highly concentrated, it should be noted that recipients do not include major steel, chemicals and cement manufacturing countries. In this way, the impact of private finance mobilised for global emission reductions in these sectors could be significantly increased. As per the range of instruments leveraged, the latter were quite diversified compared to the ones used for mitigation related public development finance.

Other sources of private assistance and financing

159. Through the philanthropies analysed, grant portfolios suggested growing attention to industry decarbonisation between the years 2020-2023 either indirectly or directly linked through a sector or country approach.

160. As for the findings from the OECD DAC/CRS database, no grant provided by a philanthropy focuses on industrial project implementation but rather targets research, innovative technologies, capacity building.

161. The granularity of available data on philanthropies and pension funds varies, making it difficult to draw conclusions on the current amount of financial commitment for industry decarbonisation.

162. 28 pension funds were analysed derived from a sample collected from the OECD survey highlighted in the “Mobilising institutional investors for financing sustainable development” report and the Thinking Ahead Institute, Top 300 Pension Funds (OECD, 2021^[23]).

163. Pension funds indeed invest in industries via foreign and domestic equities, but there is no information to what extent the decarbonisation of industries plays a role in investment decisions. However, most pension funds have adopted ESG practices and there is a growing number of Asian institutional investors interested in advancing industry decarbonisation measures through initiatives like the Climate Action 100+.

Key areas for action and perspectives

164. Based on the findings above, the following key areas for action can be identified. These could help to increasing the focus of financial and technical assistance for industry decarbonisation in EMDEs, as well as their impact on GHG emissions reduction.

165. Decarbonising industry and high-emitting sub-sectors such as steel, cement and chemicals are key for reaching net-zero objectives. Therefore, it is important to factor in the industry sector when considering financial and technical assistance for decarbonisation objectives in EMDEs.

166. When considering financial and technical assistance for industry decarbonisation in EMDEs, targeting a wider range of countries – including countries with large and/or high-emitting manufacturing capacity - would contribute to tap into a significant potential for reducing global industrial emissions.

167. Likewise, targeting programmes or implementation projects utilising disruptive low-carbon technologies (e.g., clean hydrogen or CCUS) would support deep emission reductions for the industry sector in EMDEs.

168. The development of financing instruments that could cope with the specific challenges of industry decarbonisation related projects (e.g., high upfront investments, nascent low-carbon technologies ...) would foster the uptake and scalability of these projects. Meanwhile, setting clear government and company policy signals and enabling conditions would increase investor confidence in such projects.

169. Designing funds that closely consider or target the industry sector would facilitate industry decarbonisation projects to access financial and technical assistance. This would avoid industry related projects competing with those in other sectors (e.g., energy, transport, land-use), and for which the business case could be more favourable.

170. Given the growing interest in developing industry decarbonisation projects, there is an opportunity to leverage these proposed key areas of action when designing new funds, programmes and/or platforms.

171. Equally, building on this momentum, there is a unique opportunity to boost international cooperation and partnerships for financial and technical assistance for industry decarbonisation in EMDEs, such as through the Global Matchmaking Platform.

172. Tracking and monitoring financial and technical assistance for industry decarbonisation in EMDEs is critical to understand where gaps and needs lie. This effort requires establishing a common and fit-for purpose framework. Developing methodologies and data collection based on existing frameworks will be paramount for supporting effective use of scarce public financial resources and policy guidance for industry decarbonisation.

173. **Climate Club could play a leading role to close this gap.** Besides providing the essential input to the Global Matchmaking Platform, developing a dedicated database could help monitor progress, identify gaps and needs across industrial activities. Additionally, insights into domestic assistance in EMDEs will be critical as this is a growing area in view of decarbonising local manufacturing industries. The Climate Club can expand its efforts for supporting methodology development and data collection in this area as well, based on existing frameworks.

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Annex A. Tables

Table A A.1. List of relevant funds for industry decarbonisation projects

Name of the fund	Sectoral coverage	Includes technical assistance?	Providers	Administrator of the fund	Recipients' type	Information on fund size
Mitigation Action Facility	Energy, transport and industry	No	Germany, UK, Denmark, the EU, the Children's Investment Fund Foundation (CIFF)	Mitigation Action Facility	Public	(EUR) 100 million
Green Climate Fund (GCF)	Energy, transport, buildings, cities, industry, land use, forests	Yes	Developed countries	WB	Public/private	Financing committed (USD) 12 billion
Green Climate Fund (GCF) – Readiness Programme	Energy, transport, buildings, cities, industry, land use, forests	Yes	GCF	WB	Public/private	Total resources approved for readiness (USD): 513.2 million
ADB Ventures Investment Fund 1 (VIF1)	Innovative technologies (cross-cutting)	No	Climate Investment Funds (CIF), Finland, Republic of Korea, Korea Venture Investment Corporation, Nordic Development Fund	ADB	Private	(USD) \$59.6 million
Energy and Environment Partnership in Southern and East Africa (EEP S&EA)	Innovative technologies (cross-cutting)	Yes	Austria, Denmark, Finland, Iceland, NDF and Switzerland	Nordic Development Fund (NDF)	Public/private	(EUR) 52 million invested
High-Level Technology Fund (HLTF)	Innovative technologies (cross-cutting)	Yes	Japan	ADB	Public/private	(USD) \$92.1 million
Japan Fund for the Joint Crediting Mechanism (JFJCM)	Innovative technologies (cross-cutting)	No	Japan	ADB	Public/private	(USD) \$118.7 million

Name of the fund	Sectoral coverage	Includes technical assistance?	Providers	Administrator of the fund	Recipients' type	Information on fund size
Finance and Technology Transfer Centre for Climate Change (FINTECC)	Innovative technologies (cross-cutting)	Yes	The EU and Global Environment Facility	EBRD	Private	No mention
InfraCo Africa – Sub-Sahara Infrastructure Fund	Infrastructure	No	The PIDG Trust, the UK, the Netherlands, and Switzerland	PIDG	Private	received more than USD \$200 million in funding
NDC Pipeline Accelerator (Part of C2F)	Infrastructure, agriculture, and land-use management	Yes	NDF, IDB, Nordic countries	IDB	Public/private	(EUR) 10 million + (USD) 4 million
Transformative Carbon Asset Facility (TCAF)	Renewable energy, transport, energy efficiency, solid waste management, and low carbon cities	Yes	Climate Cent Foundation, Germany, Norway, Sweden, Switzerland, Canada, and the UK	WB	Public	210 million in capital
Eastern Europe Energy Efficiency and Environment Partnership (E5P)	Energy efficiency and environmental projects	No	European Union and a group of 21 nations, including countries that benefit from the fund	EBRD	Public	(EUR) 352 million
Australian Climate Finance Partnership (ACFP)	Fully transverse (i.e. climate change or sustainable development related stated purposes)	No	Australia	ADB	Private	(USD) \$92.9 million
Climate Innovation and Development Fund		No	Bloomberg Family Foundation Inc., Goldman Sachs Charitable Gift Fund	ADB	Private	(USD) \$25 million
International Finance Corporation (IFC) – Blended Concessional Finance for Climate		No	IFC	IFC	Public/private	
International Climate Initiative (IKI)		No	Germany	Germany	Public/private	Almost (EUR) 6 billion
Canadian Climate Fund for the Americas (C2F)		No	Canada	Inter-American Investment Corporation (IIC) of IDB	Public/private	(CAD) \$223.5 million (Phase II)
Republic of Korea e-Asia and Knowledge Partnership Fund (EAKPF)		Yes	Korea	ADB	Public/private	(USD) \$263.3 million
Global Environment Facility (GEF) Trust Fund		Yes	GEF	WB	Public/private	Has provided more than (USD) 21 billion so far

Name of the fund	Sectoral coverage	Includes technical assistance?	Providers	Administrator of the fund	Recipients' type	Information on fund size
Global Environment Facility (GEF) – Small Grants Program		Yes	GEF	WB	NGO/civil society	Has provided over (USD) \$724.9 million so far
Asia-Pacific Project Preparation Facility		Yes	Multi-donor Trust Fund (Japan, Canada, Australia, Republic of Korea, ABD)	ADB	Public	(USD) 73 million
Africa Climate Change Fund (ACCF)		No	Germany, Belgium, Italy	ADB	Public	(USD) \$25.7 million
Global Innovation for Climate Finance		No	Bloomberg Philanthropies, Canada, FinDev Canada, German Federal Ministry of Economic Affairs and Climate Action, UK Department for Energy Security and Net Zero, U.S. Department of State	Climate Policy Initiative	Private	(USD) 1.7 billion
Special Climate Change Fund (SCCF)		No	Parties to the UNFCCC	World Bank	Public/Private/NGO	(USD) 363 million
Japan Fund for Poverty Reduction (JFPR)		Yes	Japan	ADB	Public	(USD) 997.1 million
Canadian Climate Fund for the Private Sector in Asia II		No	Canada	ADB	Private	(USD) 149.5 million
Asia Pacific Climate Finance Fund (AclIFF)		No	Germany	ADB	Public/Private	\$33.3 million

Source: (NDC Partnership, 2024_[17]). Updated March 2024

Table A A.2. Coverage of industry decarbonisation projects in some selected IFIs

	Industry sector covered?	Include industry decarbonisation-related projects?	Comments	Source
Asian Development Bank (ADB)	Yes "Industry & trade"	Yes		Climate Change Financing at ADB ADB Data Library Asian Development Bank (Asian Development Bank, 2024 ^[44])
African Development Bank (AfDB)	Yes "Industry, Mining, Quarrying"	Yes	Industry projects mostly relate to capacity expansion. AfDB confirmed that they work on industry decarbonisation projects in interviews through funding programs with donor countries and CIF	AfDB Data Portal (African Development Bank Group, 2024 ^[45])
Asian Infrastructure Investment Bank (AIIB)	No (energy)	No		Project List – Project – AIIB (Asian Development Bank, 2024 ^[44])
Black Sea Trade & Development Bank	Yes "Industrials, Materials"	Yes	Includes some projects on EEI energy efficiency & equipment modernization	(Black Sea Trade and Development Bank, 2024^[46]) Our projects (bstdb.org)
CIF	Yes "Industry"	Yes	Includes a dedicated industry fund (future programme) and a Clean Technology Fund	Industry Decarbonization Program Climate Investment Funds (cif.org) (Climate Investment Funds, 2024 ^[47]) Clean Technology Fund Climate Investment Funds (cif.org) (Climate Investment Funds, 2024 ^[48])
Development Bank of Latin America (CAF)	No (energy)	No		Energy (caf.com) (Development Bank of Latin America and The Caribbean, 2024 ^[49])
Eastern and Southern African Trade and Development Bank (TBD)	Yes "Manufacturing"		Industry projects mostly relate to capacity expansion	all-projects Archive – Trade and Development Bank (tdbgroup.org) (The Eastern and Southern African Trade & Development Bank (TBD), 2024 ^[50])
EBRD	Yes "Manufacturing & services, incl chemicals, cement and metals"	Yes	Industry energy efficiency, green H2, circular economy projects	EBRD Project Summary Documents (EBRD, 2024 ^[51])
European Investment Bank (EIB)	Yes "Industry"	Yes	Green H2, green steel projects	Financed projects (eib.org) (European Investment Bank, 2024 ^[52])

	Industry sector covered?	Include industry decarbonisation-related projects?	Comments	Source
GEF	Yes “Energy efficiency” category includes Industry, “Climate Change” category includes Industry	Yes	Industrial projects include energy efficiency, circularity, Green H2 projects. GEF also proposes the “GEF Global Cleantech Innovation Programme” for SMEs & start-ups (partnering with UNIDO), and which includes energy efficiency & advanced material/chemicals topics GCIP	Energy Efficiency GEF (thegef.org) Deep decarbonization of Thai industries based on the emission trading system and carbon border adjustment mechanism GEF (thegef.org) (The GEF, 2024 ^[53]) Green Hydrogen Support in Developing Countries GEF (thegef.org) (The GEF, 2024 ^[54]) Chile Green Hydrogen Facility Project GEF (thegef.org) (The GEF, 2024 ^[55])
GCF	Yes “Building, cities, industries & appliances” And “Energy efficiency” category includes Industry	Yes		Approved projects Green Climate Fund Renewable Energy Sectoral Guidance (greencclimate.fund) (Green Climate Fund, 2024 ^[56])
International Finance Corporation (IFC)	Yes “Manufacturing”	Yes	Specific fund dedicated to manufacturing and industry related decarbonization in EMDEs	Decarbonization and Sustainability (ifc.org) (International Finance Corporation (IFC), 2024 ^[57])
Islamic Development Bank (IsDB)	Yes “Industry & Mining”	No	No details on the projects	IsDB Group Interactive Map IsDB (IsDB, 2024^[58])
Inter-American Development Bank (IDB)	Yes “Industry”	Yes	“Energy” includes green H2 projects	IDB What's our Impact (iadb.org) (Inter-American Development Bank, 2024 ^[59]) NDC Invest
New Development Bank (NDB)	No (energy)	No		Home - New Development Bank (ndb.int) (New Development Bank, 2024 ^[60])
Organization of the Petroleum Exporting Countries (OPEC) Fund for international development	Yes “Industry”	No	Industry projects mostly relate to capacity expansion	Industry - OPEC Fund for International Development (The OPEC Fund for International Development, 2024^[61])
World Bank	Yes “Manufacturing”	Yes	Green H2, CCUS projects	Industrial Decarbonization Program Profile ESMAP (ESMAP, 2024^[62])

Source: IFIs websites and their project databases

Table A A.3. List of all identified philanthropic grants

Name of the Grant and or Philanthropy	Sectoral coverage	Providers	Information on fund size	Date Awarded	Region
Creating Markets for Climate-Safe Cement and Steel	Steel and Cement	Bezos Earth Fund, ClimateWorks Foundation, BlueGreen Alliance, Center for Carbon Removal, Great Plains Institute for Sustainable Development	USD 12.5 Million	2020	No regions specified
Phasing Down Oil & Gas Production in the United States	Oil and Gas	Bezos Earth Fund, Natural Resources Defense Council, in partnership with Transform Finance and Healthy Gulf	USD 31.25 Million	2020	U.S.
Cutting Methane Pollution from the Oil and Gas Industry	Oil and Gas	Bezos Earth Fund, U.S. Environmental Defense Fund, New Zealand, Smithsonian Astrophysical Observatory and Harvard U	USD 68.5 Million	2020	No region specified
Improving the Greenhouse Gas Accounting and Disclosure of Companies	Regulations	Bezos Earth Fund, GHG Protocol, World Resources Institute, and the World Business Council for Sustainable Development	USD 3.25 Million	2023	No region specified
Tracking Progress Toward Transformations Required in the Energy Sector	Energy, buildings, and transport	Bezos Earth Fund, Climate Action Tracker, New Climate Institute, Climate Analytics	USD 1.2 Million	2021	No region specified
Crux Alliance ; Industrial Decarbonisation Pillar	Industry	Crux Alliance partnership with Agora	No information provided	No date provided	No regions mentioned
NREL Foundation	Innovative Technologies (Cross-cutting), Power	Rockefeller Foundation	USD 5 Million	2023	Asia and Africa
Activating Industrial Regions for Ambitious Industrial Decarbonisation	Industry	Stiftung Mercator	USD 100.000,00	2020	No region specified
Industry- German Basic Metals	Industry, climate neutral technologies, basic materials	Climate Neutral Foundation	No information provided	No information provided	Germany
Berkely Lab Foundation- for the India Program	Industry, Transportation, Renewable Energy, Industry,	William and Flora Hewlett Foundation	USD 300,000	2022	India

Name of the Grant and or Philanthropy	Sectoral coverage	Providers	Information on fund size	Date Awarded	Region
	Innovative technologies				
CDP North America	Industry	William and Flora Hewlett Foundation	USD 200,000	2022	China
European Climate Foundation- For the 2050 Pathways Platform	Fully transverse	William and Flora Hewlett Foundation	USD 400,000	2023	EU
European Climate Foundation; For Fostering and Accelerating Asian Energy Transitions and Steel Decarbonization	Steel Industry	William and Flora Hewlett Foundation	USD 1,000,000	2023	Asia
European Climate Foundation For Asian Industry Decarbonization	Steel Industry	William and Flora Hewlett Foundation	USD 500,000	2022	Asia
Resources for the Future	Fully Transverse	William and Flora Hewlett Foundation	USD 400,000	2023	U.S.
Rockefeller Philanthropy Advisors For Climate Catalyst Steel Decarbonization Campaign	Steel Industry	William and Flora Hewlett Foundation	USD 500,000	2022	India, Japan, and Korea
ClimateWorks Foundation; For The Global Industrial Decarbonization Program	Industry	William and Flora Hewlett Foundation	USD 4,000,000	2023	Global focus
Energy Foundation; For Industry Decarbonization Roadmap and Communications	Petrochemicals and nonferrous metal sectors	William and Flora Hewlett Foundation	USD 1,500,000	2023	China
European Climate Foundation; Cross-cutting climate campaigns and programs	Fully Transverse	Sequoia Climate Foundation	No information provided	2020	No region specified
Research to Bend Emissions Curve	Fully Transverse	Sequoia Climate Foundation	No information provided	2021	No region specified
China Provincial Transition	Fully Transverse	Childrens Investment Fund Foundation	USD 28,500,000	2022	China
Accelerating EU Industrial Decarbonisation	Industry	Childrens Investment Fund Foundation	USD 16,402,000 Grant value & USD 150,000 Evaluation Budget	2020	EU
India Industrial Decarbonisation	Innovative technologies,	Childrens Investment Fund	USD 5,250,000 Grant &	2021	India

Name of the Grant and or Philanthropy	Sectoral coverage	Providers	Information on fund size	Date Awarded	Region
	Industry	Foundation	USD 250,000 for Evaluation Budget		
Carbonloop	Innovative Technologies, Carbon Storage, Industry	Solar Impluse Foundation	No information provided	2020	No Information Provided
Confluence Philanthropy; For The Decarbonizing Bank Lending Initiative	Climate Finance	William and Flora Hewlett Foundation	USD 200,000	2021	No information provided
New Energy Nexus For Climate Fintech Program	Innovative Technologies, Climate Finance	William and Flora Hewlett Foundation	USD 350,000	2021	China, Europe, U.S.
New Energy Nexus For Expanding Climate Finance Work	Climate Finance	William and Flora Hewlett Foundation	USD 22,000,00	2021	China
New Energy Nexus For Driving Innovation for Decarbonization with Chinese State-owned Enterprises	Climate Finance	William and Flora Hewlett Foundation	USD 250,000	2023	China
Environmental Defense Fund; For Agricultural Decarbonization and Methane Reduction in China and Along The BRI	Agriculture Decarbonization	William and Flora Hewlett Foundation	USD 450,000	2021	Global South
Third Generation Environmentalism Limited For Accelerating U.K. Power Sector Decarbonization	Power sector decarbonization	William and Flora Hewlett Foundation	USD 150,000	2023	UK
Keystone Center for The Keystone Decarbonization Dialogue	power, transportation, and agriculture recommendations, some cut across all sectors	William and Flora Hewlett Foundation	USD 75,000	2020	U.S.
Carbon Markets	Carbon Market	Childrens Investment Fund Foundation	USD 10,573,000	2022	Global
Carbon Mapper	Carbon Market	Childrens Investment Fund Foundation	USD 2,500,000	2021	Global; excluding India
Global Gas and Methane	Gas and Methane	Childrens Investment Fund Foundation	USD 25,800,000	2022	Global focus
Support for IRENA ETAF Platform	Research and Renewable Energy	OPEC Foundation	USD 650,000	2023	No information provided

Name of the Grant and or Philanthropy	Sectoral coverage	Providers	Information on fund size	Date Awarded	Region
Aiming to shift major European bank lenders from enablers of climate change to facilitators of the transition to net-zero by influencing the current EU's sustainable finance and prudential	Climate Finance	Laudes Foundation	No information provided	No information provided	No information provided
Columbia Center for Sustainable Investment	Oil and Gas	MacArthur Foundation	USD. 256,000	2021	U.S.
Institute for Sustainable Communities	Textile-export-manufacturing	MacArthur Foundation	USD 1.2 Million	2021	India
Dismantling the global active and passive financial support to fossil fuels with a focus on European central banks, regulatory framework, as well as through private financial institutions	Fossil Fuels	Laudes Foundation	No Information provided	No information provided	No information provided
Breakthrough Energy	Climate Change Mitigation, Innovative Technologies	No Information provided	No information provided	No information provided	No information provided
ClimateWorks Foundation	Climate Change Mitigation, Sustainable Development, Industry, Renewable Energy	No Information provided	No information provided	No information provided	No information provided

Source: Philanthropic Websites and their grant portfolios

Table A A.4. List of Questions Used to Interview the Selected Sample of International Finance Institutions

Questions
What type of instruments do you (plan to) use for industry decarbonisation: e.g. equity, mezzanine, debt, concessional loans, grant (funding and / or technical assistance)? What is the usual volume of disbursement (“ticket size”) for each of these? Why do you utilise these instruments in particular?
What type of industry decarbonisation projects do you (aim to) target: brownfield, greenfield, clusters, specific sub-sectors, only some technologies, research and development, specific countries (e.g. ODA eligible), - or no restriction?
Overall, what is the current total amount of funding provided / the volume of your dedicated fund to support industry decarbonisation, split up in how many individual projects? What are your plans, expectations or goals for the further development of this volume?
Do you (plan to) deploy or develop any derisking mechanisms or strategies/partnerships to mitigate investments risk?
Could you elaborate on the top 4 or 5 challenges, barriers, or risks in financing decarbonization initiatives in emerging markets and developing economies (EMDEs) in collaboration with your local partners (delivery, technical, etc.)?

Table A A.5. List of Pension Funds Analysed

Pension Fund	Location
Norges Bank Investment Management	Norway
ABP	Netherlands
CPP Investments	Canada
PGGM	Netherlands
PMT	Netherlands
PME	Netherlands
AP2	Sweden
Hostplus	Australia
Varma	Finland
AP4	Sweden
New Zealand Super Fund	New Zealand
UniSuper	Australia
Alecta	Sweden

Pension Fund	Location
KEVA	Finland
VBV Pensionskass AG	Austria
GEPF	South Africa
Fon.Te	Italy
Valida Pension AG	Austria
APK	Austria
PBZ	Croatia
PensionDenmark	Denmark
Government Pension Investment Japan	Japan
Central Provident Fund	Singapore
National Social Security China	China
California State Teachers	U.S.
California Public Employees	U.S.
Federal Retirement Thrift	U.S.
National Pension Fund	Korea

Table A A.6. List of international financial institutions and funds interviewed

International Financial Institutions and Funds	Date
European Bank for Reconstruction and Development	April 3, 2024
Global Environmental Facility	April 4, and 5 2024
The World Bank	April 5, 2024
The Black Sea Trade and Development Bank	April 10,2024
International Finance Corporation	May 3, 2024
Green Climate Fund	May 3, 2024
African Development Bank	May 22, 2024
Asian Development Bank	June 20, 2024