

The Climate Financing Roadmap

How Development Finance Institutions Can Build Bridges to Unlock Private Capital

November 2023

By Amine Benayad, Dr. Jens Burchardt, Veronica Chau, Dr. Oliver Dany, Dr. Alexander Noßmann, Dr. Joachim Ploetz, Dr. David Schroeren, and Dr. Erich Suess (BCG); Dr. Fritzi Köhler-Geib, Dr. Karsten Kohn, Hannah Levinger, Dr. Daniel Römer, and Alexander von Kap-herr (KfW).

Joint Publication for COP28

BCG + KFW

Boston Consulting Group partners with leaders in business and society to tackle their most important challenges and capture their greatest opportunities. BCG was the pioneer in business strategy when it was founded in 1963. Today, we work closely with clients to embrace a transformational approach aimed at benefiting all stakeholders—empowering organizations to grow, build sustainable competitive advantage, and drive positive societal impact.

Our diverse, global teams bring deep industry and functional expertise and a range of perspectives that question the status quo and spark change. BCG delivers solutions through leading-edge management consulting, technology and design, and corporate and digital ventures. We work in a uniquely collaborative model across the firm and throughout all levels of the client organization, fueled by the goal of helping our clients thrive and enabling them to make the world a better place.

KfW is one of the world's leading promotional banks. KfW has been committed to improving economic, social, and environmental living conditions across the globe on behalf of the Federal Republic of Germany and the federal states since 1948. Its financing and promotional services are aligned with the United Nations' Agenda 2030 and contribute to the achievement of the 17 Sustainable Development Goals (SDGs).

KfW does not have any branches and does not hold customer deposits. It funds its promotional business in a responsible manner and almost entirely via the international capital markets. KfW is represented at around 80 locations worldwide. As a bank committed to responsibility, KfW supports people, countries, and institutions who think ahead, driving our society toward the future. This profile is what clearly sets KfW apart from other commercial banks.

Contents

02 Executive Summary

03 Goals and Context

04 Introduction

07 DFIs: A Diverse Population Aligning on a Crucial Mission

08 The Transformation Agenda

17 The Role of Policy and Regulatory Frameworks

19 Using Climate Finance Dashboards to Advance the Transition

23 References

25 About the Authors

Executive Summary

Global decarbonization and climate adaptation requires trillions of dollars of annual investment, most of it from the private sector. Development finance institutions are seen as key mobilizers of these flows and need to fully embrace the role.

Development finance institutions (DFIs) have set ambitious climate financing goals, but most still lack strategies equal to the mobilization mission. Success will require changes to business and operating models, backed by regulatory and policy frameworks and strong support from governments and stakeholders.

DFIs are already innovating and evolving, as are the stewards of private capital at pension and sovereign wealth funds, banks, and other institutions. The need now is to accelerate collaboration.

This paper aims to support the evolution of DFIs by presenting best practices and ideas from around the world, together with the policies needed to support their enhanced mission.

The financing gap is widening, making it increasingly urgent to reduce the barriers to private capital flows.

Recent studies put annual climate financing needs at $3 trillion to $5 trillion over the next 30 years—far above the $1.3 trillion invested in 2022. Flows must grow by 30% annually to close the gap by 2030.

The earlier the annual investment level approaches the annual need, the more manageable the subsequent open investment volume will be.

Four main obstacles are currently impeding private climate financing: complex risk profiles, large investment volumes, long investment time frames, and knowledge and capacity gaps.

DFIs can lower the barriers to private climate finance by embracing institutional change and adopting best practices in financing activities.

Putting climate at the heart of the strategy—with institution-wide targets tied to mobilization, enhanced impact measurement, and other measures—is the first step.

Expanding the de-risking toolkit, widening the universe of partners, and stepping up the use of originate-to-share models such as syndication, securitization, and investment consortia are among the many effective levers available.

Adoption of this revised business model requires many operational and cultural changes at DFIs, including enhanced risk management, greater use of technology, more customer-centric processes, and development of an innovative, performance-focused culture that cultivates top talent.

Complementary economic and regulatory policies—in both the real economy and the financial sector—are key levers for empowering DFIs.

The climate crisis is prompting a reexamination of mandates at the World Bank Group and other DFIs, with various measures to strengthen financing capacity under consideration.

Economic incentives for green investment—such as tax credits and carbon pricing mechanisms—play a central role in mobilizing flows of private climate finance, and hence in creating projects that DFIs can support.

Financial market reforms that can strengthen climate finance include regulatory measures (such as approval of new currency-hedging tools) as well as increased harmonization and integration of international capital markets.

Greater availability of information—especially data-based transparency on the climate impact of investments—can improve policy choices and capital allocation, and DFIs are well suited to help on this front.



Goals and Context

This publication provides a big-picture perspective on the business and operating-model levers DFIs can use to mobilize private capital for climate financing. Written primarily with DFI leadership and shareholders in mind, this document highlights various measures and programs successfully deployed by DFIs around the globe. Thus, we do not aim to provide the final word on the matter. Nor do we ignore the complexities and the efforts that the implementation of some of the measures discussed here may involve. Rather, we provide a succinct outline of both a DFI transformation agenda and the public policy changes needed to support it. Our objective is to create momentum and drive organizational change toward greater climate financing worldwide.

The opinions expressed within this paper are the authors' alone and do not necessarily represent the position of KfW and/or BCG.



Introduction

Enormous investment is needed to decarbonize the global economy—right away, and for decades to come. The amounts far exceed what governments can provide, so creating the conditions for private capital to invest at scale is vital. DFIs are widely expected to build some of the most important bridges, a role envisioned for them by the UN's Independent High-Level Expert Group, the Bridgetown Initiative, and many others. Typically government-owned in whole or part, and accustomed to interacting in private markets, DFIs are an obvious choice and have much to contribute.

However, the consensus putting DFIs at the center of this huge task has yet to be translated into commensurate action plans. While global, regional and national DFIs have set ambitious climate financing goals and are leading in many ways, few have implemented strategic agendas equal to the expectations placed upon them. The barriers to far-reaching collaboration with the private sector—most notably, the complex risk profiles of so many climate projects—remain largely in place. Climate finance flows are still only a fraction of what's needed.

This is concerning, but not so surprising. Most of the world's 250-plus DFIs began life in an earlier age, with a variety of mandates and ownership structures (see p. 4). Mobilizing trillions of dollars to drive a global economic transition is a new and unprecedented mission. For the several dozen multilateral and national institutions most focused on it, the task will require dramatic changes to their business and operating models, backed by appropriate regulatory and policy frameworks and strong support from governments and stakeholders.

What would a cutting-edge, climate-finance-mobilizing DFI look like? There is, of course, no single answer—and also, fortunately, no need to start with a blank sheet of paper. DFIs

are already innovating and evolving, and the stewards of private capital at pension and sovereign wealth funds, banks, and other institutions are pushing ahead too. Solutions to the climate-finance challenge are emerging, just not fast enough.

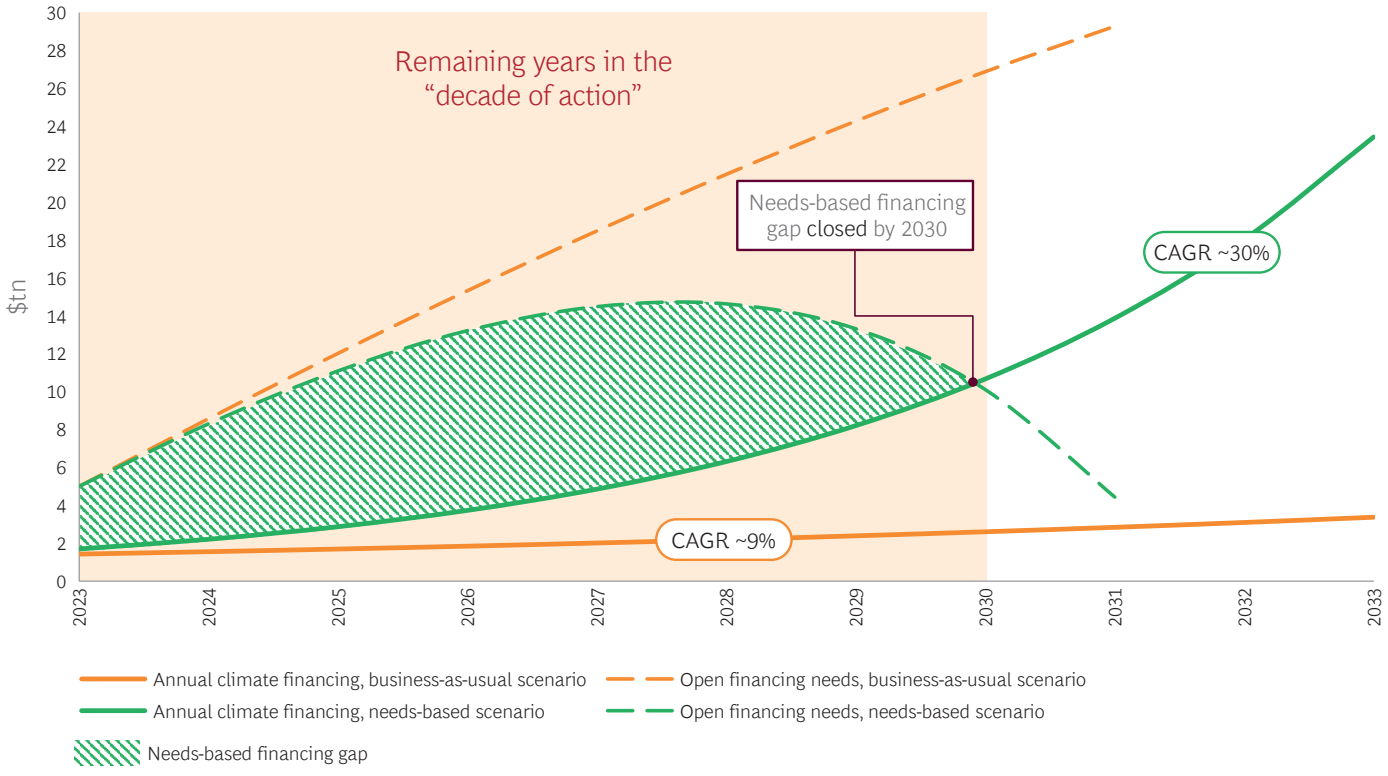
With this paper, we aim to support the evolution of DFIs by presenting best practices and ideas from around the world, together with the economic and regulatory policies needed to support their enhanced mission. KfW, with its ambitious internal transformation agenda ***KfWplus,*** which covers four dimensions—climate & environment, digitalization & innovation, managing impact & mobilizing private capital, and operational excellence—serves as a prominent example[1]. Many DFIs have contributions to share, however, which is an encouraging sign in the face of a challenge that can only be met through collaboration.

A Perilous Gap, and the Barriers to Closing It

Unless climate financing is dramatically accelerated, the size of the funding shortfall may look insurmountable by 2030. The UN-declared "decade of action"—a narrow window for decisive steps if the 1.5°C goal is to be achieved by mid century—will have been a period of falling further and further behind.

1 (KfW 2022a)

Exhibit 1 – To Catch Up With Annual Needs, Climate Finance Flows Must Triple by 2030



Source: BCG and KfW analysis, using 2022 CPI/IRENA estimates. Chart compares annual private climate funding projection in a business-as-usual scenario in which climate financing continues growing at the 2015–2022 compound annual growth rate (CAGR) of approx. 9%, and a needs-based scenario in which financing grows by 30% every year. Open financing needs are obtained by adding the $5 trillion financing need for a given year to the financing shortfalls of the previous years. (The 2022 estimate is projected to 2023 using CAGRs of the respective scenarios.)

Recent studies put annual climate financing needs between $3 trillion and $5 trillion over the next 30 years,[2] or $90 trillion to $150 trillion in total.[3] This vastly exceeds the current rate of public and private investment, estimated at $1.3 trillion in 2022.[4]

Required annual financing levels will not be reached overnight—and shortfalls in earlier years mean greater needs later on. If flows kept growing at the 2015–2022 CAGR of about 9%, annual investment would reach at most $2.6 trillion by the end of 2030 (the "business-as-usual scenario" shown by the solid yellow line in Exhibit 1). This is much less than what will be needed at that point, when the business-as-usual open financing needs will amount to nearly $27 trillion.[5] The same dynamic also makes near-term increases especially valuable: The sooner investment levels approach annual financing needs, the more manageable later investment volumes will become.

The "needs-based scenario" in Exhibit 1 shows that annual investment growth of about 30% will be required to match cumulative needs by the end of the decade. The recent pickup in annual growth to nearly 16% between 2020 and 2022 offers some encouragement. But with government contributions limited by sovereign debt burdens and a lack of political consensus, hitting the 30% target will require bringing significantly more private capital into the mix.

In theory, much more private capital is available. Institutions belonging to the Glasgow Financial Alliance for Net Zero, for example, are the stewards of $150 trillion in investable and banking assets. However, most of their net-zero pledges are still in the early stages of implementation, as the institutions wrestle with the challenges of combining climate goals with fiduciary responsibilities and lending standards.

For these and other potential sources of private capital, four main barriers currently stand in the way of greater participation:

- *Complex risk profiles*: Many climate projects come with risks—whether technological, regulatory, foreign exchange, or country-specific—which must be mitigated for the projects to be "bankable," or suitable for private-capital investors.

- *Large investment volumes*: Even when risk is low or tractable, capital needs for many projects—such as corporate transformations in high-income countries (HICs), or adaption projects in low- and middle-income countries (LMICs)—are too large for private capital to meet without new mechanisms.

- *Long investment timeframes:* Climate-linked projects often require long-term capital commitments that are difficult to align with either the yield expectations of short-term private investors or the risk tolerance of longer-term ones.

- *Knowledge gaps that deter investments and impede project creation:* Climate projects require a wide range of specialized knowledge and data about technical, financial, regulatory, environmental, and regional matters, deterring investors and making "bankable" projects difficult to create.

Not coincidentally, these barriers have been the focus of much of the climate-finance work to date at DFIs. Promising solutions have emerged in all four areas. The task now is one of rapidly refining, testing, scaling, and adding to these solutions—which many DFIs are not yet organized to do.

2 $5 trillion p.a. until 2030 (IRENA, 2023); between $4.3 trillion and $9.2 trillion p.a. by 2030, and up to $6.2 trillion to$14.1 trillion p.a. by 2050 (CPI, 2022); $125 trillion in total through 2050 (Citi, 2021); $37 trillion by 2030, or $5.3 trillion p.a. (BCG, 2023); $100 trillion to $150 trillion over 30 years, or $3 trillion to $5 trillion p.a. (GFMA, 2020). Further estimates of climate financing needs have a scope typically restricted to emerging markets and developing countries (EMDCs) excluding China, such as (IHLEG, 2022), estimating investment in transformation of energy system, adaptation & resilience (A&R), loss & damages as well as natural capital (sustainable agriculture, biodiversity, and afforestation) in EMDC at $1 trillion p.a. by 2025 and $2.4 trillion p.a. by 2030; $1.5 trillion p.a., or $45 trillion in total until 2053 for infrastructure investments in LMICs (WBG, 2019); emerging markets and developing economies (EMDEs, excl. China) climate financing needs estimated at $1.3 trillion p.a. by 2025 and $3.5 trillion p.a. by 2030 (WBG, 2023a). Divergences are in part due to differences in scope, assumptions, modelling framework and data used; (WBG, 2023b).

3 According to (GFMA, 2020), regional shares are as follows: 55% for Asia, 17% each for North America and Europe, and 11% for the rest of the world.

4 (IRENA, 2023); figure includes global investments in energy transition technologies, such as renewable energy, energy efficiency, electrified transport and heat, energy storage, hydrogen, and carbon capture and storage.

5 The historical CAGR of 9% is based on the 2015–2022 CPI/IRENA climate investment figures. This CAGR is also used to project the total climate investment in 2022 forward to 2022, at which point the two scenario CAGRs are applied.

Sidebar – DFIs: A Diverse Population Aligning on a Crucial Mission

As DFIs increasingly collaborate in climate finance, it's useful to remember that they come to the mission with varying histories, governance, and mandates. Indeed, the term "DFI" itself is applied in different ways. For the sake of simplicity, we use the term to describe multilateral institutions, such as the World Bank Group; national ones, such as KfW; and subnational institutions, such as Malaysia's Sabah Development Bank.

A database* maintained by the French Development Agency (AFD) and the Institute of New Economics at Peking University counts 527 DFIs worldwide, of which 32 are multilateral, 205 are national, and 16 subnational. The 10 biggest all have assets of more than $50 billion, while the great majority have assets of under $10 billion. Most are self-financing, seeking a return on their investments and reinvesting the proceeds, and the larger ones fund themselves in the capital markets. Most DFIs are entirely publicly owned, but some have mixed public-private ownership.

Nearly half of DFIs (97) list their primary official mandate as general development, with the next largest group (58) citing micro-, small- and medium-sized businesses, followed by promotion of export and foreign trade (34). Other concentrations include agricultural development and infrastructure and housing. Areas of geographic focus vary among HICs, upper middle-income countries and lower-income countries (LICs).

Integrating climate objectives with these mandates isn't always simple. In particular, LICs that receive climate finance want to make sure it comes in addition to development finance, not in place of it. Still, many official mission statements now reflect the climate emergency, with DFIs such as the EIB and the IDB elevating climate finance to an overarching priority. The larger institutions are pursuing increasingly detailed and ambitious climate agendas, such as the World Bank Group's Climate Change Action Plan 2021–2025 and the IDB's Climate Change Sector Framework Document, published in May 2023.

These agendas have translated not just into cooperation among DFIs (such as the annually published Joint Report on Multilateral Development Banks' Climate Finance) but also into concrete programs to boost climate financing, such as the Asian Development Bank's Innovative Finance Facility for Climate in Asia and the Pacific, an accelerator for climate financing, and the Climate Investment Fund spearheaded by the World Bank Group.

Along with different mandates, DFIs bring different capabilities to climate finance, underlining the value of collaboration. For example, smaller DFIs typically don't have the resources to manage syndications or securitizations, but they can contribute to issues led by others.

DFIs also have much to learn from each other. Recent BCG benchmarking, for example, found that only 63% of major national DFIs have equity and venture capital funding options, suggesting unused avenues for increasing product portfolio diversity and flexibility. Many DFIs also have significant potential to improve impact prioritization and measurement, as indicated by the fact that only 50% of benchmarked DFIs track and report KPIs for financing activities and only 75% of DFIs actively invest in target sectors.

Improving technological capacities for handling the scope and complexity of climate financing is another area of opportunity. Only 67% of benchmarked DFIs have invested in or are working on digitization—important for coordinating with partners and regulators.

There is, in short, a lot of untapped potential for DFIs to take advantage of as they face the climate financing challenge together.

* https://www.afd.fr/en/actualites/fics-2021-new-database-worlds-527-public-development-banks-and-financing-institutions-unveiled



The Transformation Agenda

DFIs need a business model that reflects their new mission and an operating model designed to execute on it. As Exhibit 2 illustrates, implementing these new models will require significant changes at the institutions.

Reinventing the Business Model

DFIs can use a range of products and services—the deliverables at the heart of the business model—to encourage large-scale flows of private capital into climate projects. While some instruments are new, many are proven ways to move money at scale, ready to be deployed more aggressively in support of climate goals. But first, institutions will need to reset their strategies and learn to cooperate intensively with distribution partners.

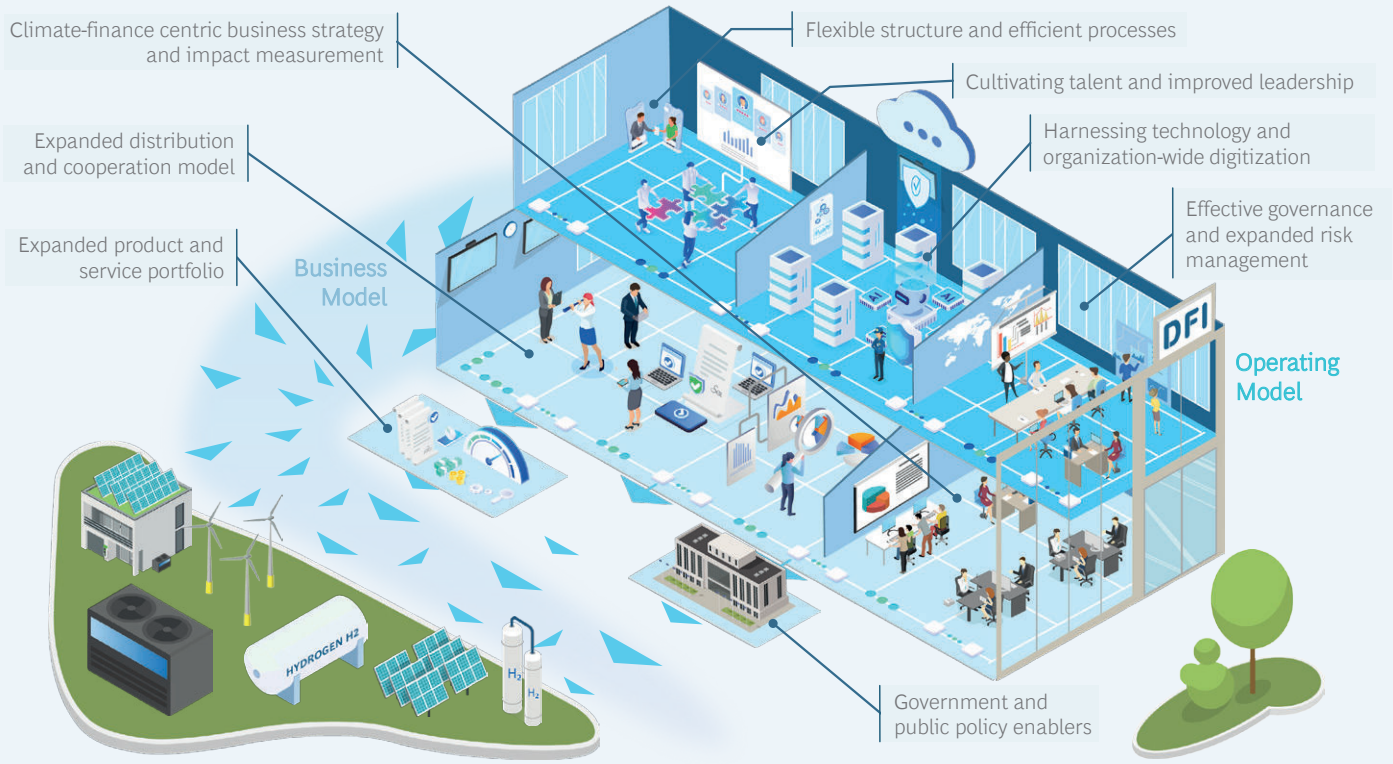
Business Model: Centering Strategy on Climate Finance

Climate finance is an extremely broad field, and DFIs are wisely choosing different areas of focus within it, in line with their resources, geographic focus, and original mandate. However, all strategies will require the following enablers to be effective:

Institution-wide Targets. Climate objectives should be embedded across the organization, with progress toward them closely tracked. This requires setting institution-wide investment quotas and sector guidelines, including standards for the climate impact per invested dollar.

For example, KfW's strategic agenda includes a quota for loan commitments related to climate change and the environment (currently around 38% of all commitments) as well as sector guidelines for high-emission industries and an exclusion list for no-go investments.

Exhibit 2 – Illustration of target picture for DFI business and operating model



Source: BCG and KfW analysis.

Enhanced Impact Measurement. Tracking climate-related financial flows and their impacts requires more than just appropriate formats, processes, and governance. Enhancements to existing tools and adoption of innovative new ones, including advanced analytics and artificial intelligence (AI), will also be necessary—not least as a means for introducing a stronger prediction focus. An example is BCG's CO2 AI, which quantifies greenhouse gas emissions—including hard-to-track scope 3 emissions, such as those from suppliers or investment holdings—and can help monitor emissions at the portfolio level.

Full Disclosure and Accountability. As DFIs get better at tracking results, they also need to improve the channels and formats they use to share the information with stakeholders and investors. This builds buy-in and credibility and supports a dialog about where to direct future investment.

A recent example is KfW's Sustainable Development Goals (SDGs) mapping, which reports on the effectiveness of new annual commitments in achieving UN SDGs.[6] Similar reports are provided by other DFIs, such as the European Investment Bank (EIB).[7] This approach allows for further extensions, including the development of more fine-grained SDG-oriented impact indicators and their integration into management reporting systems, thereby paving the way for future impact-based steering mechanisms.

New Workforce Incentives. The new business model won't come to life unless employees understand and embrace it. Internal communications need to emphasize the importance of impact. One of the clearest ways to get the message across is to shift from incentives based on DFI financing deployed to incentives based on impact—for example, on the extent of external financing unlocked.

Business Model: Products and Services That Lower the Barriers

Complex risk profiles, difficulty in scaling investment volumes, lengthy investment horizons, and gaps in knowledge, skills, and data are all impeding private capital flows into climate finance. These barriers are interrelated and, as shown in Exhibit 3 and detailed in this section, an interrelated set of product and

6 (KfW, 2022b).

7 (EIB, 2022).

service offerings can lower them. Few DFIs will be able to deliver them all; most will need to specialize in line with their strategic focus. But the sum of their efforts can unlock significant new capital flows.

De-risking Climate Investment. Several categories of risk need to be mitigated. Technology and business-development risks predominate HICs, where much of the needed investment will fund the buildout of green technologies that are still immature, such as smart grids and clean hydrogen. HICs also need to de-risk investments that enable vulnerable communities to participate in these buildouts. (In the US, a provision in the Inflation Reduction Act, known as Justice40, serves this purpose by targeting 40% of the benefits of sustainability-related stimulus programs toward such communities.) In LMICs, country, political, and currency risks are the biggest hurdle, with technology and business-development risks also a factor in certain projects.

DFIs are accustomed to mitigating investment risks for co-investors, especially in LMICs. Blended finance models, which enable DFIs and private investors to invest in the same project with different levels of risk, are their most important tools for this purpose. Now, as mobilizers of climate finance, they need to greatly expand their expertise and toolkits to work with a wider range of partners on a longer list of risks. The solutions they can offer are varied, but all rely on core competencies in analyzing, pricing, assuming and distributing risks.

At present, blended finance tools such as loan guarantees and first-loss positions are most often used in highly bespoke transactions, with relatively few participants and much of the financing remaining on the DFI's balance sheet. However, some leading DFIs are now amplifying their impact by applying the tools in originate-to-share models such as syndicated loans and asset-backed securities. By taking an equity tranche with first-loss obligations in an issuance of asset-backed securities, for example, a DFI can mitigate risks for a larger number of private investors while also preserving room on its own balance sheet to originate the next transaction. This will also help meet the closely related challenge of scaling investment volumes—especially as the originate-to-distribute models become more standardized and repeatable.

Smaller enterprises face acute needs for climate financing as well. Here, an innovative de-risking approach has been taken by the Small Industries Development Bank of India with its Partial Risk Sharing Facility. The facility gives partial-risk guarantees for a second-loss layer of capital, which provides a backstop for losses while encouraging due diligence from borrowers and project owners that might be lacking if the first layer is covered.

Sometimes a DFI's expert due diligence, together with an investment on equal terms with other participants, can improve a project's risk profile. A DFI's equity investment in a climate-tech project, for example, could make private investors more comfortable about investing alongside. This mechanism can be scaled through financial instruments that condition direct DFI investments on corresponding private investments.

Exhibit 3 – Overcoming the Barriers to Private Capital in Climate Finance

Levers by country type	Goals: De-risking climate investment	Goals: Scaling investment volumes	Goals: Matching investment horizons with investor needs	Goals: Closing knowledge and capacity gaps
High-income countries (HICs)	• Leverage loan syndication and full-service co-investment • Create large-scale investment consortia • Acquire first-loss positions	• Provide direct financing • Offer balance-sheet-neutral loan products • Embrace innovative products (e.g., Green MBS)	• Tap into institutional capital • Create investment funds with short-term rates • Coordinate investment horizons through maturity matching	• Offer advisory and consulting services • Include local financial institutions in projects • Create climate investment ecosystem
Lower middle-income countries (LMICs)	• Offer loans in local currency • Create or boost risk-hedging products • Share local knowledge and country expertise	• Provide direct financing • Support CAT-bonds issuance and insurance solutions • Adapt to regional cultures and markets		

Source: BCG and KfW analysis.

Similar effects can be triggered through DFI participation in a loan syndication—especially if the DFI provides its co-lenders a full-service package, including risk assessment, investment conditions, and financing structure, complemented by sector-specific expertise.

In LMICs, mitigating country, political, and currency risks for HIC-based investors is part of the job description for most DFIs. However, climate finance significantly expands the demand for such services.

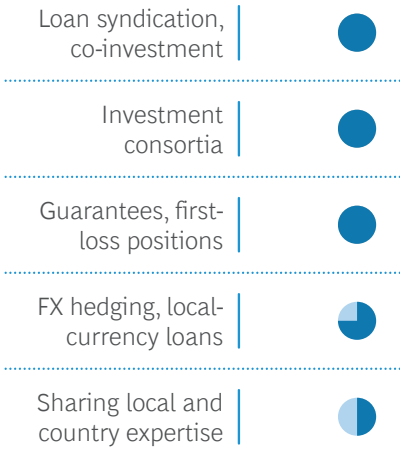
For these risks, the multilateral institutions tend to have the largest toolkits. For example, the International Finance Corp. (IFC) and Multilateral Investment Guarantee Agency (MIGA), both members of the World Bank Group, have been leaders in developing currency-hedging solutions—and MIGA led development of a now-flourishing market for political risk insurance. The need now is for a broader range of DFIs to make currency hedging products an integral part of their offering. They can also take on currency risk by issuing loans in local currencies in whole or in part—a practice that's still in its early days.[8]

Many of the risks in LMICs stem from unfamiliarity and uncertainty, and DFIs can mitigate them by making more information available. DFIs could share their assessments of projects publicly in the form of rankings, or confidentially and in greater depth with selected investors. An example of the latter is the Global Emerging Markets Risk Database Consortium (GEMs), a worldwide credit risk database for emerging markets created by the EIB and the IFC.[9]

Consortia can pool not just expertise but also capital to create platforms that build pipelines of projects for the consortia to assess, select, fund, support, and monitor. A prominent example is the Energy Transition Accelerator Financing platform, which focuses on renewable energy projects in LMICs. It is managed by the International Renewable Energy Agency (IRENA), with partners that include DFIs such as the Abu Dhabi Fund for Development and the Asian Infrastructure Investment Bank, as well as institutional investors.

Delivering Large Investment Volumes. Even in developed countries, projects with reasonable risk levels and sound investment cases can be hard to fund. A utility, for example, may simply lack the financial capacity to fund a profound conversion from coal generation to renewable energy. Meanwhile, in LMICs, market mechanisms that could route large amounts of capital to much-needed adaptation, resilience, and infrastructure projects are largely absent.

Potential impacts of de-risking levers



DFIs can help dial up the volumes in several ways. They can use their own balance sheets to fill in gaps at the project level and also to stimulate and shape new parts of the financial markets. They can also drive financial innovation through new instruments and by adapting established tools such as securitization and catastrophe bonds for use in climate finance.

Direct DFI funding through concessional loans, grants, and subsidies is powerful but finite, so it's important to ensure both climate impact and staying power for a funding program. In energy-efficiency projects, for example, DFIs can tie concessional financing to decarbonization targets for the borrower, with the DFI participating monetarily in energy savings.

To buttress their balance sheets as they do more direct financing, DFIs can issue green and sustainability bonds, capitalizing on their credibility as bond issuers and adherence to rigorous green certification procedures. DFI issuers helped pioneer the green-bond market in 2007, and in 2022, raised a global total of $44 billion.[10]

Direct financing can also play an important role in shaping markets in the real economy. In countries with carbon-trading mechanisms, direct public financing can—with sufficient regulatory backing—help ensure that carbon credit pricing provides sufficient decarbonization incentives. In the green bond market, DFIs can also contribute as investors, lowering capital costs for LMIC issuers because they are able to shoulder higher premiums for green projects. They can further support the green bond market by embracing the Green Bond Transparency Platform developed by the Inter-American Development Bank (IDB), which uses standardized reporting to make it easier for issuers and investors to participate.

8 (WEF, 2023).

9 (GEMS, 2023).

10 (CBI, 2022); E.g., KfW alone has issued over €60 billion of green bonds since 2014 making it one of the largest issuers globally; (KfW, 2023a).

Balance-sheet-neutral instruments—such as certain forms of mezzanine financing and participation certificates—can help meet the capital needs of HIC utilities that need to embrace renewables without taking on excessive debt or greatly diluting their equity. Green mortgage-backed securities that pool debt from green-certified buildings bring the power of securitization to climate finance. DFI involvement could enlarge this market and further incentivize loans for green buildings. Further out on the innovation curve is the nascent market in carbon tokens, which could use block-chain technology to boost the transparency and effectiveness of carbon credits.

DFIs can also improve the provision of venture and growth capital to innovative green technology companies. For example, KfW Capital will invest in venture capital funds that focus on climate-relevant fields as defined in the EU Green Taxonomy. A total of €100 million is available for this facility.[11]

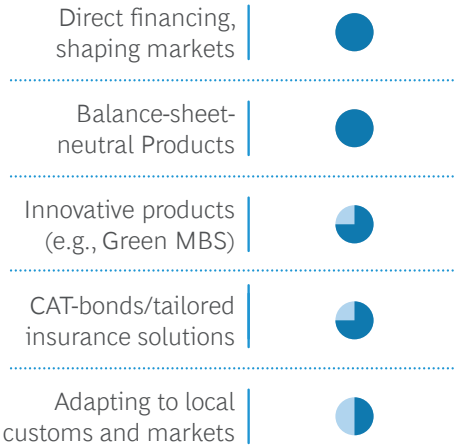
To finance adaptation and resilience projects in LMICs, DFIs could support the issuance of insurance-linked securities and catastrophe bonds connected to the impacts of climate change in these countries. The global cat bond market now exceeds $40 billion in size, having doubled in the last decade. Innovative designs could expand use of the bonds beyond the HIC issuers who currently predominate.

DFIs could also consider other tailored insurance solutions for LMICs, such as the InsuResilience Solution Fund (ISF) funded by KfW; shock-resilient loans that combine traditional loans with insurance against natural disasters; and regional climate insurance institutions such as the African Risk Capacity, set up by the African Union.[12, 13, 14] For rural borrowers facing climate-related challenges repaying commercial bank loans, India's National Bank for Agriculture and Rural Development provides short- and long-term refinancing at lower rates.

Finally, DFIs can mobilize additional finance in LMICs by adapting to local investment cultures and designing products that meet local investment demands. Participating in the growing Islamic finance market is one example. Sukuk, a type of interest-free, asset-backed security in which investment returns come from the success of the underlying asset, has potential climate finance applications. DFIs can also do more to kick-start local markets for established instruments—for example, by issuing green bonds in LMICs to establish an investor base that local sovereign agencies and municipalities can tap into in the future.

Matching Investment Horizons with Long-Term Needs. The long timeframes of climate infrastructure projects are often a deterrent to private investors, especially in LMICs. While institutions such as pension funds and insurers need long-duration investments in their portfolios to match their own long-term liabilities, the risk levels in LMIC investments make them unsuitable for the purpose.

Potential impacts of levers for scaling investment volumes



DFIs, with their mandates to focus on long-term goals and their expertise in mitigating risk, can make the match work. For example, in 2021, the IFC launched MCPP One Planet, the newest facility of its ten-year old Managed Co-Lending Portfolio Program to pursue blended, Paris-agreement-aligned financing in emerging markets. Private investors commit capital to a pool and lend to climate projects alongside the IFC, relying on it to manage risks and originate and manage the loans.

B-bonds, developed by the IDB, use an originate-to-share model to both scale investment volumes and facilitate long-term investments in LMICs by institutional investors. The IDB issues a bond for the majority of a project's financing, sells it to a special purpose vehicle, and then privately places the debt with an institutional investor. The debt for a Costa Rican solar project, for instance, has a 25-year maturity.

For investors with shorter investment horizons, DFIs can pool their capital in climate investment funds that offer them competitive short-term rates and use the money to finance climate projects with longer investment horizons.

11 (KfW, 2023b).
12 (ISF, 2023).
13 (KfW, 2023c).
14 (ARC, 2023).

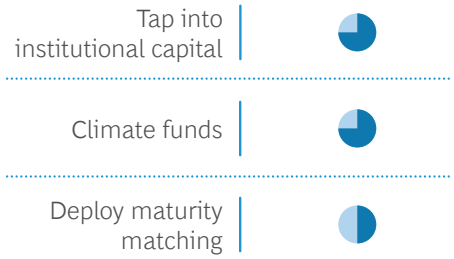
Another option is maturity matching. In this model, private capital could cover the short-term financing needs of climate projects—such as temporary working capital—while DFI, public, and patient private or institutional capital covers long-term financing needs.

DFI issuance of green bonds also draws in institutional investors as a source of long-term capital. Going by survey results, there is unmet demand from institutional investors for green bonds issued by sovereigns and development banks.[15]

Closing Knowledge Gaps to Create More Bankable Projects. A big reason for the shortage of projects suitable for private investors is a general lack of expertise among potential project owners. DFIs can help by either sharing their own expertise directly or making financing contingent on the project owners working with third-party consultants.

Advisory and consulting services mean going beyond sharing data and offering lessons on project management, technology integration, risk assessment methodologies, and regulatory compliance. In a given market, DFIs or consultants could advise project developers on framework and project pipeline development, securing second-party opinion providers and arrangers and ensuring alignment of issuance with national transition pathways and climate goals.

Potential impacts of levers for matching investment horizons



Many of these services could be delivered as DFIs include more local financial institutions in transactions—a crucial step for expanding climate financing in the mid- to long-term. Enabling DFI partners to learn through doing will set the groundwork for future investment growth and capacity even if the local investment contribution is currently limited.

Through stepped-up advisory efforts, DFIs have the potential to create a climate investment ecosystem for emerging businesses and investment initiatives with climate-focused objectives. For example, KfW's PtX platform helps public and private entities in LMICs develop and fund projects across the clean hydrogen value chain.

Business Model: Expanding Distribution and Cooperation. For DFIs to succeed as mobilizers of capital, they need to work with the widest possible range of partners, including many outside their traditional areas of focus. They also need to modernize and refine their distribution and cooperation models to reflect the priorities and constraints of the investors they seek to partner with.

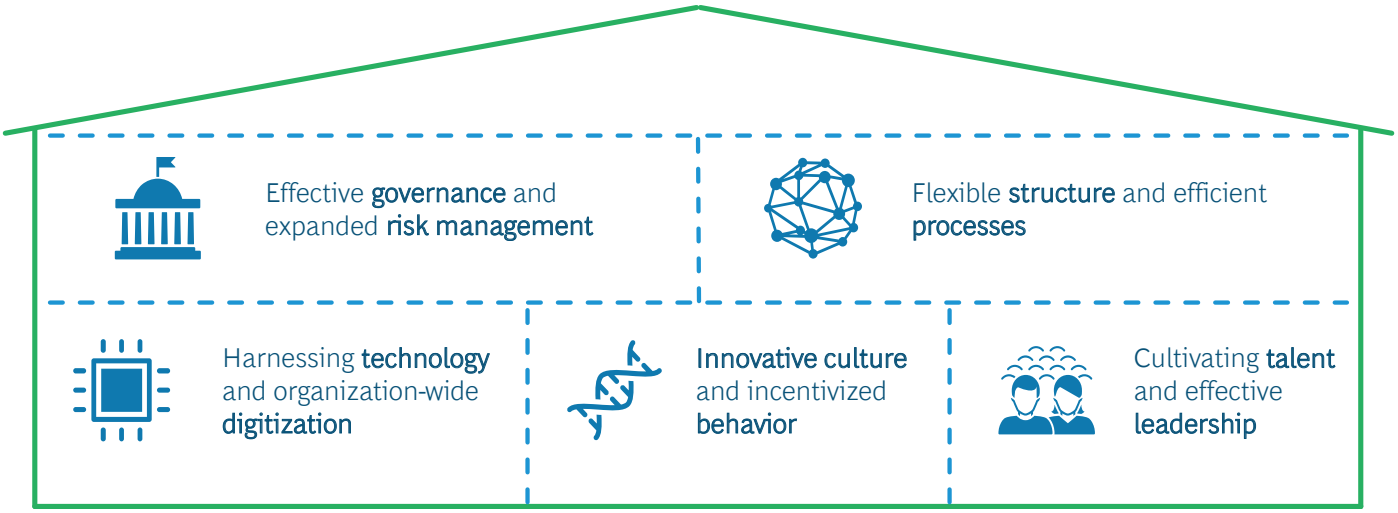
The list of potential partners is long. Among the newer ones are corporate strategic investors and other members of the growing climate finance ecosystem, such as climate funds, retail investors, and private equity and venture capital funds. Relationships with more-traditional partners—including commercial banks, pension and sovereign wealth funds, insurers, other development banks and local financial institutions, and NGOs—will need to be deepened. Working with all of them may not be practical, but a variety of partners seeking a range of investment types also increases the variety of climate projects a DFI can take on. Digital solutions such as online investment portals and syndication platforms can facilitate interactions with this larger cast of collaborators.

The African Development Bank offers a good example of enhanced distribution and cooperation in its use of multi-donor thematic trust funds. These funds pool capital from partners (including other DFIs) and use it to finance and advise on sustainability-focused projects with a common theme, such as water capacity and clean energy.

It's especially important for DFIs to deepen collaboration with other DFIs across national and regional boundaries. With bankable green investment opportunities still too few, synergies from cooperation could help to increase demand in green investment. In particular, joint approaches could help to efficiently close current knowledge and data gaps.

15 (Sangiorgi, 2021).

Exhibit 4 – Evolution of DFI Operating Model Has Five Dimensions



Source: BCG, KfW analysis.

Re-imagining the Operating Model

With business models refocused on mobilizing climate finance, DFIs will need to revamp their operating models accordingly. As shown in Exhibit 3, we see five areas where a typical institution will need to drive change.

Operating Model: Effective Governance and Expanded Risk Management

DFIs will help lead the global financial system through the many risks inherent to the climate transition. That means their risk management regimes must be effective at both the operational level and the mission level. Protecting the mission requires managing both impact risk—the danger of not meeting public expectations that investments will advance the transition—and reputational risk to maintain the trust needed for a partner-based business model.

Getting governance right is the first step. Responsibility for the central pillars of risk policy lies with the board, with clear delineation of duties between it and an institution's leadership. Business activities are best steered according to a long-term risk framework that determines risk appetite, with parameters revised periodically. The goal is to be deliberate and prudent about taking on risks while maintaining the ability to react quickly to changing landscapes.

At the operational level, DFIs need to reassess their risk management toolkits, helping to set the pace as data quality and best practices improve. Using advanced climate scenario models, they can, for instance, test the resilience of a portfolio under different combinations of physical and transition risks, and also gauge how the addition of a particular investment or participation in a consortium would change the portfolio's risk profile.

For example, the first climate stress test carried out by KfW focused on quantifying the impact of an increase in the price of carbon certificates on KfW's portfolio. To improve risk steering at the portfolio level, KfW aggregates risk assessments in different types of "heat maps," such as the general Risk Heat Map and the Environment and Climate Risk Heat Map. KfW also monitors risks among its many collaborators using its "ESG Risk Profile," a digital application that allows in-house analysts to score vulnerabilities of individual counterparties (for example, corporates, banks, investment funds), industries, countries, and other entities.

Project-level tools are important as well, as the IDB has shown with its innovative Disaster and Climate Change Risk Assessment methodology. The three-phase methodology facilitates identification and assessment of climate change risks throughout the life cycle of a project.[16]

DFIs must be prepared to face both familiar types of operational risks—such as information security, compliance, business interruption, and legal vulnerabilities—and difficult new questions about what kinds of risks are acceptable to them as

16 (IDB, 2020).

chief mobilizers of climate finance. Most profoundly, should their risk assessment and management be limited to lender risk, or should it also include risks to the borrower that may result from, say, loans not being granted? Answering such questions will require a paradigm shift not just for DFI leadership but also in the relationship between DFIs and their shareholders.

Operating Model: Flexible Structure and Client-Centric Processes

As the climate transition accelerates, DFIs will need adaptive organizational structures that enable flexible responses to evolving challenges. They will also need improvements in both client-facing processes (to manage multiple, high-volume investment programs) and product-generating processes (for crafting tailored products).

Private sector corporate and investment banks have lessons to teach in all these areas, but the unique mission and ownership structures of DFIs mean that approaches proven in the commercial world must be fine-tuned to match DFIs' particular needs.

Agile organizational structures are characterized by dynamic, iterative approaches to decision-making and cross-functional teamwork on short-term projects, together with a regular re-assessment of priorities and strategies. They often replace traditional solid-line reporting systems with more flexible matrix management models to encourage collaboration across functions and activities.

Process-optimization levers include digitization and automation to improve partner and client integration and decrease processing times. Ensuring that processes are efficient and client centric is no less important than in private sector banking, but is often more challenging for DFIs given their wider universe of partners and the larger number of compliance, risk and ESG considerations in their financing activities. A regular review of processes is important for confirming client centricity and identifying weaknesses, such as inefficient or redundant workflows. Continuous control with key performance indicators (KPIs) and service levels carried out by a centralized process management system ensures that improvements are made.

Operating Model: Harnessing Technology and Digitization

Cutting-edge digital technology plays a crucial role in a smart DFI operating model. In a first step, digitization can enable more efficient administration and facilitate client access, liberating resources for value-adding activities while increasing customer and workforce satisfaction.

For example, digitization has significantly improved KfW's ability to mobilize climate finance in its retail channel. Retail clients now get easier access, personalized product offerings, real-time impact tracking data, and forward-looking action recommendations. They can also apply for financial support and grants via automated platforms. Other advances include a digital platform that matches financing needs with financing providers, similar to the EuroQuity platform created by the French public sector investment bank Bpifrance.[17]

While not many DFIs have such channels, improved retail service is only the lowest-hanging fruit on the digital tree. Building up a capacity to harness big data and analyze vast sets of climate-related information can be a gamechanger for DFIs, allowing for enhanced impact measurement and risk assessment, improved monitoring of climate projects, and better decisions regarding investments and partners. Deploying generative AI can reduce administrative, legal, and oversight workloads and unlock new capabilities concerning predictive risk management and independent preparation of climate project evaluations and impact modeling. For example, the CO2 AI solution developed by BCG is capable of tracking scope 3 emissions.

Advanced digital tools can also greatly narrow the knowledge and capacity gaps that are currently holding back private climate investment. When delivered in a modern IT architecture, including cloud solutions and application programming interfaces, they can enable seamless data sharing and integration with external partners, allowing for a streamlined exchange of information as well as faster and more efficient climate financing processes.

Unlocking this potential, however, will require tremendous effort, posing different kinds of challenges for different DFIs. Young institutions may be more flexible in adapting to new digital technologies but struggle to raise the requisite capital. By contrast, legacy DFIs may show greater readiness to make the necessary investment but face a tougher transition because of their reliance on legacy systems.

Operating Model: An Innovative and Performance-Focused Culture

If DFIs fully embrace the serious implications of global warming and embed a sense of mission throughout their organizations, they can establish themselves as key players in the climate transformation. Building climate targets into institutions' incentive structures is an important first step. For example, workforce incentives can be created by linking promotions or bonuses to climate-related targets, similar to a measure that is being considered by National Australia Bank.[18]

17 (EuroQuity, 2023).

18 (Financial Review, 2023).

Being a role model also means taking steps toward DFIs' own carbon neutrality. Fortunately, most DFIs are now reducing the carbon footprint of their buildings, sourcing of utilities and supplies, and means of transport.

By fostering a culture of performance and innovation, DFIs can set the stage for speedy iteration, rapid course correction when needed, openness to uncertainties, and quick adaptability to the rapidly evolving climate landscape. While achieving such a culture may be challenging to DFIs given their heritage as public or semi-public institutions, the climate transition can also be regarded as an opportunity, accelerating a shift toward a more dynamic institutional culture on par with commercial players.

Operating Model: Cultivating Talent and Effective Leadership

Tackling the enormous challenges of climate financing—and especially the ones involving expertise in innovative technologies—requires that DFIs develop, attract, and retain some of the most sought-after talent in the labor market.

This will be difficult but possible if DFIs move to create the dynamic, agile work environments needed for their mission, and cultivate talent in the communities and countries they seek to serve. As mission-driven public institutions, DFIs will be able to couple professional development opportunities with a clear purpose and measurable impact—things that are increasingly important for many job seekers. This case will only strengthen if DFIs succeed in positioning themselves as key mobilizers of global climate financing.

Human resources strategies that closely monitor the talent inventory and anticipate future needs are especially valuable in fast-changing markets. They can help DFIs prevent talent gaps before they arise.

Enhancing leadership capacities among the existing workforce is just as important as attracting new talent. Developing leaders who can "manage by objectives"—that is, by focusing on overall strategic and operational targets—is crucial. This may be done with a comprehensive support and mentorship program that reaches from entry-level to leadership positions. Such a program would aim to foster impact-driven thinking throughout the workforce; benefits would include an improved alignment of day-to-day operations with overall strategic climate objectives, enhanced development of long-term strategies, and greater adaptability in the face of rapidly evolving climate challenges.



The Role of Policy and Regulatory Frameworks

While the capital-mobilization mission is an urgent one, the world's DFIs can't transform themselves overnight, or without supportive policy and regulatory frameworks and backing from stakeholders. In years to come, the contributions DFIs can make in the transition to a sustainable, decarbonized global economy will depend on the paths of policy and regulation in both the real economy and the financial system, and on how policymakers and the public view the roles of DFIs.

DFI Mandates, Coordination, and Transparency

The climate crisis is prompting a reexamination of many DFI mandates. Most notably, reforms at the World Bank Group are aimed at increasing its lending capacity and elevating climate finance alongside its traditional development mission.

Governments and stakeholders at other national and multilateral DFIs are considering similar moves. Specifics vary according to the founding mandates and capabilities of the institutions, but mechanisms for strengthening financing capacity are a major focus. Ideas under consideration include enabling DFIs to differentiate promotional intensity among investment purposes; to issue bonds backed by their assets; to add equity or hybrid capital from private shareholders; and to offer government guarantees to de-risk investments.

If boosting financing capacity tops the climate finance agenda, fostering more effective collaboration ranks not far behind. Here, too, DFIs can make a major contribution.

The need for coordination among the burgeoning number of climate transition workstreams will only increase in years to come. Responsibility and expertise are distributed across numerous sectors and associated agencies and departments, at both the national and the multilateral levels. With higher profiles for their institutions and a less siloed view of their own roles, DFI professionals can help get the many players in sync.

One way they could do this would be to champion the creation of climate transition dashboards. Target-oriented and cooperative action requires adequate and transparent data. Smart dashboards could track progress toward climate targets in different sectors and the impact of specific climate-related measures and facilitate assessment of climate investment impact. Such overviews could provide valuable input for policy decisions. (See exhibit below and p. 19.)

Exhibit 5: Dashboard



Source: BCG and KfW.

Sidebar – Using Climate Finance Dashboards to Advance the Transition

With responsibilities and expertise for decarbonization efforts widely dispersed, it is difficult to judge the effectiveness of prior climate-finance investments and see where future investments are most needed. This can be remedied by implementing climate finance dashboards to provide industry-sector overviews at the national, regional, and global levels.

Dashboards can help to promote quick and well-founded policy decisions. Such instruments have already been used successfully for global crises: the COVID-19 dashboard created at Johns Hopkins University was a real-time monitoring system that served the public, scientists, and political decision makers in tracking the pandemic.

How Dashboards Would Work. Dashboards help to make decisions by viewing the topic from three different angles, aggregated by sector and countries: progress toward climate targets; impact of specific climate-related measures; and assessment of climate investment impact.

As shown in Exhibit 5, the dashboard is structured according to the core sectors for climate change: Industry road transport, heating, electricity, and agriculture—and is organized in a three-layer format.

The first layer shows non-sector-specific KPIs. It begins with an overarching view of decarbonization progress toward Paris goals, specified by sector.

At the second layer, investment-related KPIs form the core, showing the coverage of outstanding investment needs (including a 2030 forecast of investment needs covered to meet Paris goals) as well as the climate investment impact for each sector (measured with GHG reduction investment effectiveness [$ per ton of CO_2-equivalent]).

At the third layer are top-level sector-specific KPIs that provide general sector-specific tracking information. For example, CO_2 reduction advances in transportation can be tracked through the total emissions per passenger-kilometer (for passenger transport) or per ton-kilometer (for cargo).

For each core sector, additional sector-specific KPIs track the impact of specific decarbonization measures and investment impact per measure—for example, the share of buildings receiving a favorable energy rating, or the share of wind power among total electricity production. Such climate KPIs need to be complemented with a concrete needs-based path toward the achievement of climate targets against which progress can be measured. This allows KPIs to be used as early warning indicators.

Producing the Dashboards. Gathering, analyzing, and standardizing dashboard data with the required frequency will require a significant commitment of expertise and resources, but improving the targeting of trillions of dollars in climate financing will make the commitment worthwhile. Given their expertise and increasingly central role in climate finance, DFIs are logical candidates to take on that task.

Using the Output of the Dashboards. Results and their implications will need to be carefully analyzed and fed into a dialogue among decision makers and stakeholders to help them choose concrete and actionable measures. While this process would necessarily vary from country to country and within different multilateral settings, DFIs could also make a strong contribution here, offering valuable input into policy decisions.

Encouraging Green Investments in the Real Economy

Many of the climate solutions that DFIs are preparing to finance don't fully exist yet. A well-known example is clean hydrogen, the leading contender to replace fossil fuels in heavy industry. DFIs are already participating in projects (still in their early stages) aimed at producing clean hydrogen at scale and shipping it around the world. But until the remaining technological hurdles are cleared and economies of scale are achieved, goals such as the comprehensive conversion of the world's cement and steel plants will remain out of reach.

Similar decarbonization challenges exist across the global economy. Since markets alone can't drive the solutions forward, governments are intervening with a variety of tools to enhance the economic viability of green investment. Clean hydrogen development is now getting extensive government support in the EU, the US, and around the world, as are scalable batteries, carbon capture and storage, upstream enabling technologies such as specialized semiconductors, and many other pieces of the decarbonization puzzle.[19]

As these support measures continue to grow, they will help create more financing opportunities for DFIs. The most important measures include the following:

Consistent carbon pricing. Carbon pricing is an efficient policy tool for steering investment toward greener ways of doing things, without being prescriptive about which solutions are best in a given case. Implemented on a global scale, a uniform carbon price would do a lot to cut emissions.

At present, however, the geopolitical picture appears to rule out a global approach, making it necessary to focus on bilateral and multilateral cooperation. Plans for a minimum carbon price are part of the 2022 agreement among the G7 states to create a "climate club"—a low-carbon market with coordinated policies and the scale to incentivize low-carbon approaches by companies.[20]

A related instrument for advancing international climate action is the carbon border adjustment mechanism (CBAM) now taking effect in the EU.[21] CBAM is an effective way to protect against carbon leakage and safeguard competitive neutrality in domestic and international markets. However, it is important to avoid detrimental impacts on LMICs, many of which face hurdles in moving to low-carbon goods and technologies. These countries may require two-pronged support: first, targeted relief during the implementation phase and, second, accompanying policies that help build the capacities for low-carbon alternatives.

DFIs and their networks can support climate-club approaches in multiple ways. One of the effects of carbon pricing is to incentivize certain emitters to use carbon markets, where they can purchase offsetting credits backed by nature-based projects that reduce global carbon dioxide (CO2) levels. These markets have great promise, but are held back by their inherent lack of transparency and predictability. DFIs can use their expertise and authority to address these weaknesses. For example, KfW's WALD Initiative combines an Impact Fund that channels private investments to LMICs' emerging carbon markets, while its Innovation Facility promotes future-looking projects from mangrove reforestation to seagrass protection on a grants-based scheme, topped up by Germany's economic cooperation and development ministry (BMZ).

Increased Tax Incentives. Tax policy offers several levers for incentivizing green investment. One example is lowering capital gains taxes on the returns on green bonds to help offset the higher cost of such bonds and thereby increase their attractiveness to investors. Another is creating extended carryforward and carryback periods, allowing companies to apply current losses from green investments to their returns in future or past years, reducing the overall tax burden on those investments.

Similarly, tax legislation may allow for accelerated depreciation of green assets, allowing businesses to apply a greater share of their green capital expenditure to their taxable revenues in earlier years. For instance, this measure was implemented in Peru as part of an instrument allowing for accelerated depreciation of up to 20% of the investments in machinery, equipment, and civil construction for renewable energy generation.[22] Subsidized promotional loans and grants awarded by DFIs for climate related investment projects follow the same logic.

Simplified Planning and Approval Processes. Another way to encourage green investments is to improve the efficiency of oversight processes. When German businesses were asked their preferred policy measures for enhancing climate investment, nearly two thirds cited simplifying planning and approval processes.[23] To achieve this, procedures must be standardized, digitalized, and made less bureaucratic.

19 For example, the Green Hydrogen Industrial Clusters Guidelines created by the United Nations outlines general strategies for governments and industries to replace fossil fuels with hydrogen in traditionally carbon-intensive industries. Similarly, an association of companies from traditionally carbon-intensive industries (incl. E.ON, Evonik, RWE, and Thyssenkrupp, among others) has recently worked to join forces with the German government to transform the Ruhr area into a hub for hydrogen infrastructure and production, dubbed the "Hydrogen Valley." Cf. (UNIDO, 2023).

20 (KfW, 2023d).

21 (KfW, 2021).

22 (IEA, 2013).

23 (KfW, 2022c).

Supportive Financial Sector Measures

To be effective, efforts to incentivize climate investment in the real economy must be closely linked to both changes in the financial sector and the mandates granted to DFIs.

Regulatory Levers

Adjusting, fine-tuning, and (where necessary) reducing or eliminating financial regulations can encourage more climate financing. The majority of legislative decisions are made at the national level, but there is also a trend toward regional and global coordination. Levers at the national level include the following:

Lowering Risk Weightings for Climate Loans. Regulators in certain jurisdictions are creating more room for climate financing on corporate and bank balance sheets by lowering the risk weighting for selected long-term decarbonization debt—up to and including balance sheet neutrality for some investments. This approach is analogous to public budget resources put aside for special purpose funds.

Promoting New Currency-Hedging Tools. As noted earlier, currency risk is a major obstacle to cross-border climate investment, especially in LMICs. These investments often require long-term hedges that private markets are unable to provide at sufficiently low rates.

Public entities could play an important role in meeting this need, perhaps working in concert with private or non-governmental initiatives such as The Currency Exchange Fund (TCX).[24] For example, DFIs might become active market participants that sell necessary hedging derivatives to select buyers.

Multilateral Measures

Global flows of climate finance require governments and civil society to coordinate on multiple fronts—even against an increasingly fragmented geopolitical backdrop. Important areas for close collaboration include the following:

Emphasizing Climate in Capital-Markets Integration. In recent years, climate finance has become an increasingly important element of broader efforts to integrate capital markets. Green objectives included in the European Commission's first action plan toward a European capital markets union, adopted in 2015, have since been augmented by implementation of the Sustainability Finance Disclosure Regulation, an EU-wide transparency framework containing precise disclosure obligations for capital market participants, as well as the EU Taxonomy setting out common definitions for sustainable and green investments, enacted in 2020.[25,26,27]

In Asia, the Association of Southeast Asian Nations (ASEAN) has spearheaded efforts to integrate capital markets in the region.28 In the Middle East, the Gulf Cooperation Council's (GCC's) Capital Markets Integration Strategy Working Group is at work; and on the African continent, the West African Capital Markets Integration (WACMI) project, supported by the African Development Bank, is underway.[29,30]

Seeking Alignment in Risk Reporting. The absence of unified international standards for investment vehicles such as green bonds lowers investor confidence, increases knowledge gaps, and deepens investment monitoring needs. Over and above efforts to align risk-related regulation across international capital markets, government efforts to harmonize, standardize, and simplify disclosure rules and reporting requirements across industries and sectors could reduce complexities in risk assessment and compliance efforts.

Internationally recognized standards for disclosures and reporting of climate and environmental impact, such as the Task Force on Climate-related Financial Disclosures (TCFD), the Global Reporting Initiative (GRI), the European Sustainability Standards Board, as well as the International Sustainability Standards Board (ISSB) also contribute to transparency.[31,32,33]

Additionality of International Climate Financing. Although absolute volumes of climate financing needs are greatest in HICs, carbon impact for each invested dollar tends to be greatest in LMICs. Yet, offers of climate financing by HICs and intergovernmental bodies may be resisted by LMICs, insofar as climate financing increases are subtracted from previous development aid or other forms of intergovernmental financial support.

24 TCX is a global development finance initiative that offers long-term currency swaps and futures trading in more than 80 financial markets where such hedging options are nonexistent or difficult to access. The fund began in 2007 and has since provided hedging instruments for a loan volume of $8.5 billion, spread over 3,500 transactions. It currently has an overall exposure of $5 billion in 60 currencies from emerging and developing economies. By selling part of that exposure to private investors, TCX opens up markets and provides access to the international capital market to these emerging and developing economies; cf. (KfW, 2020).

25 (EU, 2015).

26 (EU, 2023a).

27 (EU, 2023b).

28 (ASEAN, 2023).

29 (GCC, 2020).

30 (AfDB, 2021).

31 (TCFD, 2023).

32 (GRI, 2023).

33 (SASB, 2023).

International initiatives that provide dedicated climate funding to LMICs over and above existing commitments—either as nonrefundable grants or as low-interest loans—address this discrepancy. Delivering on pledged financing—for example, as part of the G7-led Just Energy Transition Partnership (JETP) geared toward decarbonizing the energy sectors in countries such as South Africa, Indonesia, and Senegal—and addressing key obstacles that have thus far hampered implementation of initiatives are both vital.[34] Creating a climate-focused version of the International Development Agency is an another option under consideration.

Finally, modifications of international development aid standards could help broaden the scope for climate finance: If investment guarantees provided by DFIs counted as official development aid, this would increase incentives for HIC governments to grant mandates to DFIs to deploy this potentially very effective climate financing tool.

Conclusion

Of the many challenges addressed in this paper, the additionality issue points most directly to the transition ahead for DFIs. They are not being asked to take up a new mission because their founding missions no longer matter. Their original goals are no less important, but now they must be met alongside—and often integrated with—pressing new ones.

That task is not impossible, but it does require a full recognition of its scope, and of the fact that it will take these institutions well beyond their traditional niches and ways of operating. DFIs will need both strategic advancement and collaboration to fulfill their new roles as lead partners, main catalysts, and expert monitors and coordinators in a financing project that is not only the largest and most consequential in history, but also the most urgent.

34 (JETP, 2023).

References

(AfDB, 2021) "West African Capital Markets Integration (WACMI) Phase 2 Project," General Procurement Notices (GPN), African Development Bank Group, 2021, https://www.afdb.org/en/documents/gpn-multinational-west-african-capital-markets-integration-wacmi-phase-2-project, accessed October 13, 2023.

(ARC, 2023) "African Risk Capacity Group Home," https://www.arc.int/, accessed October 13, 2023.

(ASEAN, 2023) "Finance Integration- Overview," Association of Southeast Asian Nations, https://asean.org/our-communities/economic-community/finance-integration/, accessed October 13, 2023.

(BCG, 2023) "A Blueprint for the Energy Transition," BCG, 2023, https://www.bcg.com/industries/energy/energy-transition/blueprint, accessed October 11, 2023.

(CBI, 2022) "Interactive Data Platform as of end 2022," Climate Bonds Initiative 2022, https://www.climatebonds.net/market/data/#issuer-type-charts, accessed November 13, 2023.

(Citi, 2021) "Climate Finance: Mobilizing the Public and Private Sector to Ensure a Just Energy Transition," Citi Global Perspectives & Solutions, 2021, https://icg.citi.com/icghome/what-we-think/citigps/insights/climate-finance, accessed October 11, 2023.

(CPI, 2022) "Global Landscape of Climate Finance A Decade of Data: 2011-2020," Climate Policy Initiative, 2020, https://www.climatepolicyinitiative.org/publication/global-landscape-of-climate-finance-a-decade-of-data/, accessed October 11, 2023.

(EIB, 2022) "The European Investment Bank's contribution to the Sustainable Development Goals," EIB 2022, https://www.eib.org/attachments/publications/eibs_contribution_to_the_sustainable_development_goals_en.pdf, accessed November 13, 2023.

(EU, 2015) "Action Plan on Building a Capital Markets Union," European Commission, 2015, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0468, accessed October 13, 2023

(EU, 2023a) "Sustainability-related disclosure in the financial services sector," European Commission, 2023, https://finance.ec.europa.eu/sustainable-finance/disclosures/sustainability-related-disclosure-financial-services-sector_en, accessed October 13, 2023.

(EU, 2023b) "EU taxonomy for sustainable activities," European Commission, https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en, accessed October 13, 2023.

(EuroQuity, 2023) "EuroQuity- Companies," https://www.euroquity.com/en/companies, accessed October 13, 2023.

(Financial Review, 2023) "NAB chairman says bonuses could be linked to climate," Financial Review, 2023, https://www.afr.com/companies/financial-services/nab-chairman-says-bonuses-could-be-linked-to-climate-20230830-p5e0nj, accessed October 13, 2023.

(GCC, 2020) "The 6th Meeting of the GCC Capital Markets Integration Strategy Working Group," Gulf Cooperation Council, 2020, https://www.gcc-sg.org/en-us/MediaCenter/NewsCooperation/News/Pages/news2020-7-20-3.aspx, accessed October 13, 2023.

(GEMS, 2023) "Global Emerging Markets Risk Database Consortium," https://www.gemsriskdatabase.org/, accessed October 13, 2023.

(GFMA, 2020) "Climate Finance Markets and the Real Economy," Global Financial Markets Association/BCG, 2020, https://www.gfma.org/policies-resources/gfma-and-bcg-report-on-climate-finance-markets-and-the-real-economy/, accessed October 13, 2023.

(GRI, 2023) "Global Reporting Initiative- Home" https://www.globalreporting.org/, accessed October 13, 2023.

(IDB, 2020) "Assessing disaster and climate risk is a crucial step to project resilience," Inter-American Development Bank, 2020, https://blogs.iadb.org/sostenibilidad/en/assessing-disaster-and-climate-risk-is-a-crucial-step-to-project-resilience/, accessed October 13, 2023.

(IEA, 2013) "Accelerated depreciation benefits," International Energy Agency, 2013, https://www.iea.org/policies/4839-accelerated-depreciation-benefits, accessed October 13, 2023.

(IHLEG, 2022) "Finance for climate action: scaling up investment for climate and development," International High-Level Expert Group on Climate Finance, 2022, https://www.lse.ac.uk/granthaminstitute/publication/finance-for-climate-action-scaling-up-investment-for-climate-and-development/, accessed October 13, 2023.

(IRENA, 2023) "Global Landscape of Renewable Energy Finance 2023," International Renewable Energy Agency & Climate Policy Initiative, 2023, https://www.irena.org/Publications/2023/Feb/Global-landscape-of-renewable-energy-finance-2023, accessed October 11, 2023.

(ISF, 2023) "InsuResilience Solutions Fund," https://insuresilience-solutions-fund.org/, accessed October 13, 2023.

(JETP, 2023) "Just Energy Transition Partnership (JETP)," https://web.pln.co.id/pln-jetp/jetp-home, accessed October 13, 2023.

(KfW, 2020) "Mehr Investitionen in Afrika durch Absicherung des Währungsrisikos: KfW gibt Garantie," https://www.kfw.de/%C3%9Cber-die-KfW/Newsroom/Aktuelles/Pressemitteilungen-Details_617280.html, accessed October 13, 2023.

(KfW, 2021) "The EU's carbon border adjustment: A trade barrier or an opportunity for global climate action?," KfW Research 2021, https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Fokus-Volkswirtschaft/Fokus-englische-Dateien/Fokus-2021-EN/Focus-No.-345-September-2021-CBAM.pdf, accessed November 13, 2023.

(KfW, 2022a) "KfWplus Transformations agenda," KfW 2022, https://www.kfw.de/%C3%9Cber-die-KfW/Berichtsportal/Berichterstattung-2022/KfWplus/, accessed October 11, 2023.

(KfW, 2022b) "The SDG mapping of KfW Group," KfW 2022, https://www.kfw.de/nachhaltigkeit/Dokumente/Sonstiges/SDG-Methodenpapier-DE-EN-2.pdf, accessed October 13, 2023.

(KfW, 2022c) "KfW Climate Barometer 2022," KfW Research 2022, https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-KfW-Klimabarometer/KfW-Climate-Barometer-2022.pdf, accessed November 13, 2023.

(KfW, 2023a) "Invest in the future. Transform it now," KfW 2023, https://www.kfw.de/PDF/Investor-Relations/PFD-Dokumente-Green-Bonds/KfW-Green-Bond-Presentation.pdf, accessed November 13, 2023.

(KfW, 2023b) "Green Transition Facility: EUR 100 million for 'green innovations'," KfW 2023, https://www.kfw.de/About-KfW/Newsroom/Latest-News/Pressemitteilungen-Details_765952.html, accessed November 13, 2023.

(KfW, 2023c) "Banque Ouest Africaine de Développement (BOAD)," https://www.kfw-entwicklungsbank.de/Global-commitment/Subsahara-Africa/BOAD/, accessed October 13, 2023.

(KfW, 2023d) "Global carbon pricing: The rocky road to an effective global response to climate change," KfW Research 2023, https://www.kfw.de/PDF/Download-Center/Konzernthemen/Research/PDF-Dokumente-Fokus-Volkswirtschaft/Fokus-englische-Dateien/Fokus-2023-EN/Focus-No.-417-February-2023-Carbon-pricing.pdf, accessed November 13, 2023.

(Sangiorgi, 2021) "Why do institutional investors buy green bonds: evidence from a survey of European asset managers," Sangiorgi, Ivan (2021), International Review of Financial Analysis, 75. 101738, https://centaur.reading.ac.uk/96623/1/Sangiorgi%20Schopohl_Why%20Do%20Institutional%20Investors%20Buy%20Green%20Bonds_IRFA_final.pdf, accessed November 13, 2023.

(SASB, 2023) "Sustainability Accounting Standards Board- Home," https://sasb.org/, accessed October 13, 2023.

(TCFD, 2023) "Task Force on Climate-related Financial Disclosures- Home," https://www.fsb-tcfd.org/, accessed October 13, 2023.

(UNIDO, 2023) "Hydrogen? Check. Green hydrogen? Check. Green hydrogen industrial clusters? Here we go.," United Nations Industrial Development Organization, 2023, https://www.unido.org/news/hydrogen-check-green-hydrogen-check-green-hydrogen-industrial-clusters-here-we-go.

(WBG, 2019) "Beyond the Gap: How Countries Can Afford the Infrastructure They Need while Protecting the Planet," World Bank Group, 2019, https://openknowledge.worldbank.org/entities/publication/95801508-1130-5ed0-843a-113b50285006, accessed October 13, 2023.

(WBG, 2023a) 'The Big Push for Transformation through Climate and Development: Recommendations of the High-Level Advisory Group (HLAG) on Sustainable and Inclusive Recovery and Growth," World Bank Group, 2023, https://openknowledge.worldbank.org/entities/publication/7498f2ad-6dd5-4834-a751-a8dc20e9cba1, accessed October 2023.

(WBG, 2023b) "What You Need to Know About How CCDRs Estimate Climate Finance Needs," World Bank Group, 2023, https://www.worldbank.org/en/news/feature/2023/03/13/what-you-need-to-know-about-how-ccdrs-estimate-climate-finance-needs, accessed October 2023.

(WEF, 2023) "How to better deploy development finance to fund the energy transition," World Economic Forum, 2023, https://www.weforum.org/agenda/2023/09/development-finance-to-combat-climate-change-energy-transition/, accessed October 13, 2023.

About the Authors



Amine Benayad is a managing director and partner in BCG's Paris office and is a Climate and Sustainability lead in France as well as the global lead for Climate and Sustainability in financial institutions.



Dr. Alexander Noßmann is a managing director and partner in the Dusseldorf office of BCG. He is an expert in global development banking and climate financing.



Dr. Jens Burchardt is a managing director and partner in the Berlin office of BCG. He is a cofounder of the BCG Center for Climate and Sustainability and coauthor of the first and second Climate Paths for Germany study.



Dr. Joachim Ploetz is a project leader in BCG's Munich office. He is an expert in public sector transformation.



Veronica Chau is a partner and director for Sustainable Investing & Social Impact in the Toronto office of BCG. She is an expert in climate change and sustainability and a global co-lead in Catalytic and Blended Finance.



Dr. David Schroeren is a junior consultant in BCG's Berlin Office.



Dr. Oliver Dany is a managing director and senior partner in the Frankfurt office of BCG. He is an expert in development banks and large-scale transformation and a topic leader for corporate banking in Germany.



Dr. Erich Suess is a managing director and partner in the Munich office of BCG. He is a leader in Climate and Sustainability ESG in financial institutions for Central Europe.

About the Authors



Dr. Fritzi Köhler-Geib is chief economist at KfW. She is an expert on macroeconomics, financial crises, and growth-enhancing policies, including those supporting the green transformation.



Dr. Daniel Römer is senior economist at KfW Research. He is an expert on climate economics and the green transformation.



Dr. Karsten Kohn is team head for Energy, Environment and Municipalities at KfW Research. He is an expert on sustainable finance, climate, and applied microeconomics.



Alexander von Kap-herr is senior sector economist at KfW Development Bank. He is an expert on climate change and climate finance.



Hannah Levinger is senior economist at KfW Research. She is an expert on emerging markets and international climate finance.

Acknowledgments

We would like to express our gratitude for the support and countless constructive insights provided by the following: Georgina Baker, Varad Pande, Qahir Dhanani, Markus Massi, Greg Fischer, Enrico Tanduo, Anne Kleppe, Neetu Chitkara, Othman Omary, Mills Schenck, Katie Hill, Vivek Adhia, Jürgen Kern, Peter Hilliges, Alexander Klein and Barbara Pirich.

Special thanks to Ken Klee for his invaluable editorial work, including his sparring on content.

We would also like to thank Philippa Keir, Sophia Perwas, Anel Pritz Anna Roessler and Christine Volk for their organizational support as well as Ulrich Kremer and Christine Sennewald for graphics and layout as well as René Stein for research assistance.

Copyright Cover Image Source: stock.adobe.com/moodboard.
Copyright Image p.3 Source: stock.adobe.com/appledesign.
Copyright Image p.4 Source: EyeEM (photographer: Sarun Wannavijit).
Copyright Image p.8 Source: EyeEM (photographer: Maskot).

For information or permission to reprint, please contact KfW at research@kfw.de.

To find the latest KfW and BCG content, please visit kfw.de or bcg.com.
Follow KfW and Boston Consulting Group on Facebook and X (formerly known as Twitter).

© KfW, Palmengartenstraße 5–9, DE-60325 Frankfurt am Main. All rights reserved.
11/23


BCG + KFW