KPMG

Sustainable finance revolution

How banks can profit from sustainable growth

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Foreword

If you attended or followed COP29 as I did, you saw how finance was a key theme at COP29. While developing countries requested US$1.3 trillion by 2035 to address climate change and protect their citizens, developed countries pledged just US$300 billion annually by 2035 — a significant funding gap.

The KPMG report *Sustainable finance revolution: How banks can profit from sustainable growth* focuses on how banks and financial institutions can play a leading role in bridging the funding gap to address climate change while simultaneously updating to become bold commercial innovators.

As the Climate Change and Decarbonization Lead and Global Head of Renewable Energy at KPMG International, I — along with my talented colleagues — see how sustainable and climate finance are emerging as unique and urgent opportunities for banks to visibly transform using a sustainability-first lens on decision-making, risk management and the customer products and services they offer. By directing billions of capital towards many more ventures such as sustainable bonds, sustainable loans, proprietary climate-risk assessment tools, sustainable insurance products in collaboration with insurance companies, impact investing accounts, sustainable agriculture financing — the list goes on — banks can help address imperative economic, social and environmental challenges as they realize monetary benefits in parallel.

Sustainable finance revolution goes deeper, showcasing real-world examples across four essential areas — agriculture, adaptation and resilience, infrastructure and green retail housing — to demonstrate the breadth of opportunities that generate solid returns for banks, as well as noticeable climate-positive impacts. There are opportunities to capture commercial opportunities beyond financing already low carbon solutions and expand to financing solutions enablers, nascent sustainable themes, and the decarbonization of high-emitting sectors. Some of these innovative funding initiatives include:

- precision-farming technologies, agroforestry, and drought-resistant crops
- better health systems to contain the spread of diseases linked to climate change
- sustainability-linked loans and green mortgages
- advanced irrigation systems, flood forecasting technology and resilient building materials
- sustainable building materials and green roofs.

Readers should feel inspired by the range of novel investment options that go beyond funding renewables or divesting from fossil fuels to take greater economic advantage of the transition to net zero.

Investing in sustainability projects can pose certain risks, including regulatory conditions, reliability of emerging technologies, unpredictable market demand and geopolitics, for instance.

But leading banks already have many of the foundations needed to fund these project types in a way that achieves a win-win-win for the planet, their customers, and their shareholders: expert commercial decision-making; sound risk management and governance capabilities; and advanced data and analytical proficiency. Applying the same disciplines while embracing sustainable finance as a core business domain will help earn banks solid leadership status and reinvigorate much-needed momentum in the race to net zero.

KPMG professionals can help. The multidisciplinary team brings industry-specific experience and knowledge to support the banking industry in becoming more innovative and fiscally fluid. Together we can help accelerate climate action and close the funding gap.

Mike Hayes
Climate Change and Decarbonization Lead
Global Head of Renewable Energy
KPMG International

Introduction

Whatever report we read, whichever conference we attend, whatever podcast we listen to, dollar figures associated with climate change are quoted in the trillions as the amount needed to create a sustainable future. With that many zeroes, we all know that the public sector simply cannot do it alone. The mobilization of capital via the private sector is essential (and, quite frankly, lucrative).

Without question, financial institutions have a significant role to fulfil in the transition to a net-zero economy. While sustainable funding initiatives by banks have so far focused on green finance (i.e. financing existing low-carbon climate solutions) the demand for transition finance (i.e. financial support provided to facilitate the transition of companies, sectors or economies from high-carbon to low-carbon operations) is evolving.

With increased demand for sustainable finance solutions, banks can explore additional and valuable strategies beyond funding renewables or divesting from fossil fuels.

A holistic economic transition calls for a sophisticated approach — with financiers who can support their customers at every stage of the decarbonization journey through more advanced credit-decisioning and risk-pricing capabilities, as well as with innovative products and ecosystem solutions alongside robust, transparent and consistent performance assessment metrics.

Because the size of the financing challenge is significant, it brings unparalleled, sizeable opportunities. While the path begins with important green products — such as green bonds, sustainability-linked loans and sustainable development goals (SDGs) debt swaps, for example — **the true transition is realized when sustainable lending becomes 'business as usual' and delivers real economy decarbonization impacts**. Applying a **sustainability-first approach** will likely be the game-changer on the journey to net zero.

Sustainable finance revolution: How banks can profit from sustainable growth presents real-world examples where banks have started making noticeable leaps in sustainable and climate finance. Their sustainability-first approach is opening up lending opportunities beyond typical decarbonization and building sturdy customer relationships as they become more climate-aware, recognize trends, and understand and identify opportunities for business growth and expansion.

With a sustainability-first approach, banks around the world can gain the first-mover advantage while building strong brand recognition, developing customer loyalty, attracting new clients and becoming a top-of-mind collaborator on the path to net zero. Those that understand this rapid and transformational change will be best placed to take advantage of it.

While converting to a net-zero economy seems inevitable, the global investment community — shareholders, wealth funds and banks — will help set the pace of change and play a critical role by raising and directing capital to support this shift to a low-carbon economy.[1]

We hope this report provides valuable insights for financial services executives and particularly, those with a role in ESG, sustainability, investment, finance, risk, and compliance, to help understand the investment and growth opportunities, reconsider their traditional risk-management approach, and pivot their approach to decision-making when it comes to lending and embedding sustainability.

To learn more about the insights shared in this report or to discuss your unique objectives, we encourage you to contact your local KPMG member firm.

The true transition is realized when sustainable lending becomes 'business as usual'.

[1] KPMG Australia, "30 Voices on 2030: The ESG Revolution (2023)".

Contents

Global call to action

"No continent is left untouched, with heatwaves, droughts, typhoons and hurricanes causing mass destruction around the world. Ninety percent of disasters are now classed as weather and climate-related, costing the world economy US$520 billion each year, while 26 million people are pushed into poverty as a result."[2]

Climate change is costly

We know the statistics.

- Weather-related disasters over the past 50 years = increased by a factor of five[3]
- Decline in wildlife population since 1970 = 69%[4]
- Species threatened with extinction = 1 million[5]
- The warmest years on historical record (1850–2023) = the last 10[6]
- Arctic snow cover extent, duration, depth, and water stored by the snowpack = all declining[7]
- Amount of the world's population "highly vulnerable" to the effects of climate change = more than 40%[8]

The list goes on.

[2] United Nations, "The Climate Crisis – A Race We Can Win" (2020).
[3] World Meteorological Organization, "Weather-related disasters increase over past 50 years, causing more damage but fewer deaths" (2021).
[4] WWF, "Living Planet Report" (2023).
[5] IPBES, "Media Release: Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'" (2019).
[6] National Oceanic and Atmospheric Administration, "2023 was the world's warmest year on record, by far" (2024).
[7] NOAA Climate.gov, "Climate change: spring snow cover in the Northern Hemisphere"(2022).
[8] BBC, "Climate change: IPCC report warns of 'irreversible' impacts of global warming" (2022).

What's less widely known is the precise and sizeable amount of capital needed to tackle these statistics by mitigating the climate crisis.

An enormous amount of sustainable and climate finance is needed to support the conversion to a zero-carbon future. While it has been estimated that about US$5 trillion is needed annually,[9] the 2024 report by Force for Good — *Capital as a Force for Good* — notes surging costs and currently estimates **an annual funding gap of US$14–17 trillion, with a total cost of funding the UN's SDGs to 2030 at US$112–136 trillion.**[10] The precise number ranges between sources but it is significant.

The financial services sector is experiencing increased demand for sustainable finance solutions to support the transition to a net-zero economy. Beyond sustainability reporting — as important as that remains, particularly considering the new and growing number of national and regional reporting standards — they hold big purse-strings intertwined with obvious and significant risk. Manage the risks, however, and banks have an inherent capability and the distinct opportunity to demonstrate leadership by continuing to embrace decarbonization initiatives while designing innovative products and solutions. Banks will also need to manage stakeholder expectations and meet clients "where they are" while still driving momentum to achieve net zero.

Opportunities for banks that bring net-zero benefits

When we zoom in on the banking industry, we see that banks' participation in the sustainable and climate finance market varies widely. While some banks around the globe have started aligning their portfolios with the goals of the Paris Agreement and other climate-related commitments, others have either been slower to act, or choose differently altogether.

Key themes

- We still see a lot of profitable lending concentrated in legacy, high-carbon industries. It is inevitable that banks are challenged to let go of the legacy and embrace lending activity that starts to decarbonize their portfolio emissions (and publicly report on those reductions). Protecting revenue and franchise value is important, but banks can design and develop new and innovative lending arrangements through transition finance and adaptation finance as a pathway to reducing portfolio emissions.
- Some financial institutions behave reactively, rather than proactively. While extreme weather events result in lost investments and high payouts, an approach that takes adaptation finance into account could help make extreme-weather-prone communities more resilient, resulting in lower payouts over the long term.
- A lack of clear and consistent standards for what constitutes a sustainable investment can make it difficult for banks to identify suitable investment opportunities. However, banks can leverage existing sustainable finance taxonomies for the relevant regions (i.e. EU Taxonomy or Singapore-Asia Taxonomy) and market guidance to build a decision-enabling framework to assess opportunities.
- While some sustainable investment opportunities may still present high perceived risks and lower returns, regulatory changes such as stricter regulations on carbon and greenhouse gas emissions can level the playing field. For example, the EU's Carbon Border Adjustment Mechanism (CBAM), will likely play a key role in resetting the true cost of fossil fuels-related imports.

If banks find their way to navigate climate-forward approaches proactively and thoughtfully, it may not only stimulate a more rapid and just transition to net zero but can open the door to new and abundant economic (i.e. revenue-generating) opportunities.

[9] IEA2024, "Pathway to critical and formidable goal of net-zero emissions by 2050 is narrow but brings huge benefits, according to IEA special report" (May 2021).
[10] Force for Good, "Capital as a Force for Good" (2024).

For this report, the following terms are defined as:

Sustainable finance

Sustainable finance has been typically referred to the process of taking Environmental, Social, and Governance (ESG) considerations into investment decisions to achieve sustainability outcomes. The main themes of sustainable finance in the market today that are mentioned throughout this report are green, transition, adaptation and climate.[11]

01

Green finance

Financing low-carbon technologies and solutions such as wind, solar, batteries, and electric vehicles, and no/low-carbon assets, activities and entities.[12]

02

Transition finance

As the market is rapidly evolving, definitions for transition finance are converging around the financing a wide spectrum of technologies, activities, and entities which facilitate a transition to net zero. Currently in the market, transition finance refers to the financial support high-emitting sectors acutely need to decarbonize.[13]

03

Adaptation and resilience finance

Financing technologies, activities, and entities which aim to manage and minimize risk, reduce vulnerability, and enhance the capacity of systems to deal with the impacts of natural hazards and change climate.[14]

04

Climate finance

Typically refers to "new and additional financial resources" provided by developed countries to emerging market and developing countries (EMDE) to support with the transition to Net zero. Climate finance can include green, transition and adaptation finance, and can encompass aspects of just transition, and nature and biodiversity.[15]

[11] Glasgow Financial Alliance for Net Zero (GFANZ). "Scaling Transition Finance and Real-economy Decarbonization: Supplement to the 2022 Net-zero Transition Plans report" (December 2023).
[12] Ibid.
[13] Ibid.
[14] The Global City. "Scaling Transition Finance: Finding of the Transition Finance Market Review" (2024).
[15] United Nations Climate Change. "Introduction to Climate Finance" (2024).

Real-world example: Hurricane Helene

Another devastatingly expensive storm

Hurricane Helene's 500-mile path of destruction is expected to incur US$15 billion to US$26 billion in property damage; preliminary estimates of the total damage and economic loss from Helene in the US is between US$95 billion and US$110 billion.[16]

As of 7 October 2024, the death toll surpassed 230 across six states, with many more people still unaccounted for.[17]

Apart from the personal tragedy, this has widespread implications for the insurance industry, which in turn will create considerable risk for bank lenders.

The banks that have started actively participating in the sustainable finance market recognize the massive business opportunities presented by the growing demand for sustainable and low-carbon products and services, as well as solution enablers. They are leveraging both transition finance and adaptation finance to tap into these opportunities. They recognize:

- **Focusing exclusively on financing 'green' projects and companies can limit the range of investment opportunities** and will not be enough to meet global targets. It is becoming increasingly crucial to finance the decarbonization of high-emission sectors and to support the phase-out of carbon-intensive assets, otherwise knows as transition finance. This approach not only addresses urgent environmental needs but can also expand the commercial opportunities available to financiers.
- **Financing and supporting the decarbonization of high-emitting sectors** such as heavy industrial sectors, transport, energy, agriculture, and the built environment, can help banks contribute to job creation, health and wellbeing, and other social and environmental benefits.
- **The capability of adaptation finance to build resilience,** helping communities reduce the risks they face from climate hazards, such as storms, drought, flooding and wildfires — and ultimately protecting people — while at the same time increasing the bank's own resilience.
- **Transparency is a crucial criterion in sustainable investing,** as both transition and adaptation finance necessitate additional assessments and metrics to ensure their credibility. This allows banks to effectively communicate their efforts and avoid any accusations of greenwashing.

> "Banking leaders are reevaluating their lending and investment strategies, business models, and operations. They are actively listening to their customers, employees, and broader stakeholders. This approach helps ensure that their organizations are well-positioned to seize the opportunities presented by the net-zero transition while remaining resilient to its challenges. The recent financial agreements from COP29 highlight the crucial role that the global financial services industry should play in achieving transition-related objectives."

Francisco Uria
Global Head of Banking, KPMG International

[16] AP News, "At least 64 dead and millions without power after Helene's deadly march across the Southeast" (2024).
[17] ABC News, "Hurricane Helene updates: Death toll surpasses 230 as rescue efforts continue" (2024)

Once-in-a-lifetime opportunity

As the world moves to a greener future, a significant amount of finance must be channeled to support and accelerate this shift. We need to bridge the gap.

Bridging the gap

Global finance needs for the net zero transition, a broad range of sustainable, transition and adaptation finance to increase an estimated US$14–17 trillion annually by 2030 to limit average global temperature rises in line with the Paris Agreement. Currently, less than 20 percent of climate finance needs are being met.[18] **Financial institutions can fill a critical role to bridge the gap between the current lack of capital and the huge demand for it.**

Over the past few years, the global financial community has been reassessing the climate finance market for quality products and solid investment returns. Sustainable finance issuance volumes are not where they need to be; in fact, in 2023, global issuance barely reached US$1.3 trillion.[19] Whether this is due to concerns about the impact of new climate-related regulations, low global economic growth, lack of investment opportunities or something else, the levels are simply too low.

The financing gap underscores the urgency for financial institutions to dramatically scale up their investments. Finance is needed in many areas, including but not limited to energy, forestry, transportation, tourism, agriculture, retail housing and infrastructure — using more innovative funding mechanisms and more collaborative behaviors.

In response to these challenges, the financial sector is undergoing profound change. Regulatory pressures such as the European Union's Green Deal are pushing financial institutions to fund sustainable investments, while investors are prioritizing them, as the understanding and the impact of climate change grows.

[18] Force for Good, "Capital as a Force for Good" (2024).
[19] Global Center on Adaption, ""Adapting to climate change could add $7 trillion to the global economy by 2030" (2021).

The scale of the challenge to address climate change and transition our economies to net zero is catalyzing a transformative shift in the industry, driving innovation, increasing transparency and aligning capital flows with the goal of a sustainable and resilient global economy. **Banks that move swiftly to bridge the gap will likely reap the rewards despite the size of the challenge.**

Financing a new global economy

When it comes to addressing the net zero transition within the banking industry, however, moving swiftly is not always natural. Banks are inherently prudent, have always led the way in observing regulatory compliance, and must continue to prioritize the identification, assessment and mitigation of risk. Banks can still observe these reliable and customary methods of operation to **become a transition partner and lead the way to a net-zero future.**

A combination of bank archetypes can create the ideal persona to provide much-needed sustainable and climate finance.

Bank archetypes in the provision of sustainable finance

Rule Follower

Meets prudential responsibilities by managing exposure to businesses and assets impacted by climate risks.

Complies with ESG regulations, including by setting decarbonization targets and managing emissions across their lending portfolios accordingly, and reporting on green asset ratio where applicable per sustainable finance taxonomies (i.e. EU Taxonomy).

Risk Manager

Takes a screening approach to mitigate risks and target opportunities.

Offers green loans, bonds and other products to climate-friendly businesses and projects.

Sets a carbon budget and limits exposure to high-emitting customers and projects accordingly.

Transition Partner

Takes a proactive, engagement approach to enable transformation across the economy.

Leverages existing market guidance on transition finance to develop strategies, frameworks and monitoring processes to finance the decarbonization of transition to net zero, including the high-emitting sectors.

Embeds sustainable finance strategy into net zero transition planning and corporate financial planning to deliver against net zero and financial targets.

> "What is needed is a significant, perhaps unprecedented shift of mindset, that requires a corresponding rewiring of how banks think about finance and lending. It's uncomfortable and difficult because banks are being asked by regulators and politicians to think and act in a way that they haven't traditionally had to operate. It's a profound change from being largely reactive and making credit-based decisions to being proactive and anticipating and driving necessary change in the real economy."

Richard Brenau
Lead of Global ESG Banking, KPMG International

Banks that underestimate climate change risk, scale and impact, of the net zero transition, could experience cost impacts from mispricing it. For instance, the **economic loss of climate inaction** could cost up to US$43 trillion, emphasizing the need for accurate risk assessment.[20]

Adopting the ideal persona and acting swiftly and deliberately in the new global economy means addressing climate challenges that not only mitigate environmental risks but also drive innovation, create new markets, and foster economic growth through job creation and advances in technology. For example, investing US$1.8 trillion globally in adaptation for climate change could generate more than US$7 trillion in net benefits in this decade.[21] Appreciating the size of the challenge will enable banks to capture the broad scope of opportunities it presents.

> Climate change is the defining issue of our time, and the transition to a low-carbon economy is the greatest commercial opportunity of our age.

Mark Carney
Former Governor of the Bank of England[22]

For banks around the world — no matter the jurisdiction — investing in transition finance and adaptation finance will likely earn them leadership status.

The transition finance market includes climate solutions, enablers of climate solutions and decarbonization initiatives for high-emitting sectors. These financing activities can reduce GHGs, increase resilience to climate change impacts and enhance sustainable development, such as agriculture, manufacturing, infrastructure and retail housing. Banks can drive environmental impact while attracting financial returns. **Transitioning to renewable energy, for example, could boost global GDP by US$98 trillion, underscoring the financial sector's pivotal role in financing this shift.[23]**

> Green finance is a gateway to trillions in sustainable investments. It can be a catalyst for the transformation of financial systems and the global economy.

António Guterres
UN Secretary-General[24]

The reputation of individual banks now depends on their foresight and the proactive steps they take to integrate climate risk management and sustainable finance into their investment and lending portfolios by providing the enormous amounts of sustainable finance needed to stop global warming.

To take the lead now, they need to start operating, financing and lending in a very different way.

[20] The Economist Intelligence Unit, "The cost of inaction. Recognising the value at risk from climate change" (2015).
[21] Global Center on Adaptation, "Adapting to climate change could add $7 trillion to the global economy by 2030" (2021).
[22] Forbes, "The $100 Trillion Investment Opportunity in the climate transition" (2021).
[23] International Renewable Energy Agency, "Transforming the Energy System" (2019).
[24] United Nations Secretary-General, Remarks on Climate Change (2023).

Real-world example: Nestlé: Driving change

Global business is driving change in the race to net zero by creating demand in the transition finance market.

Nestlé institutes its sustainability rules and initiatives when doing business in foreign countries and regions. The sustainable finance market helps on-the-ground suppliers transition their operations to meet a global company's requirements, as well as their net-zero goals.

Nestlé has implemented **water stewardship initiatives**, such as improving water efficiency in its operations and working with local communities to protect and restore water resources. More than 40 water regeneration projects are underway around their water bottling sites.

On the path to net zero, most **GHG reductions** are due to changes in the way Nestlé sources raw materials, such as investments in deforestation prevention and regenerative agriculture in its agricultural supply chains.

Responsible sourcing ensures raw materials are traceable to point of origin and are farmed using methods aligned to Nestlé's Responsible Sourcing Standard, while progressively delivering benefits to people, nature and climate. Reforestation within or near its sourcing locations is an essential part of decarbonizing their operations and supply chain. Their farmer relationship management system collects data for 250,000+ farms, helping to track progress on GHG emission reductions and regenerative agriculture practices.[25]

Banks can provide finance support to local suppliers who need it to provide essential products and services to global businesses, thus helping achieve a spectrum of net-zero goals across jurisdictions.

[25] Nestlé, "Annual Review" (2023).

Finding the opportunities

Financial services firms across the world are starting to take advantage of the transition to net zero.

Early adoption pays off

Banks currently leading the way have (i) switched their primary focus to engage directly with clients and customers on net-zero initiatives, (ii) embedded sustainability into their own operations, and (iii) are supporting the transformation of the global economy to one based on sustainability as it transitions to net zero.

The rewards are tangible. **In 2023, investors saw better returns from sustainable funds than traditional funds across all major asset classes and regions. In the same year, the issue of impact bonds (including green, social, sustainability and sustainability-linked bonds) totaled US$939 billion.[26]**

Early adopters are working to establish strong reputations in sustainable finance as they help advance the race to net zero. They are actively fostering a greater understanding of the implications of green and sustainable investments, including risk, returns, and time horizons while focusing more directly on climate transition and adaptation finance. They are also providing sustainable finance across a broader range of high-emitting sectors than just clean energy, including agriculture and sustainable infrastructure.

[26] Bloomberg Professional Services, "Green bonds reached new heights in 2023" (2024).

In 2021, Standard Chartered Bank announced its plan to allocate

US$300 billion

towards sustainable finance by 2030, integrating sustainability practices to support the transition to a low-carbon economy.[27]

HSBC was an original early adopter when, in 2012, the bank co-launched the HSBC Water Programme and provided

US$150 million

in funding. Fast forward to present-day, and HSBC has committed to prioritize financing and investment that supports the transition to a net-zero global economy by supporting customers with US$750 billion to US$1 trillion in sustainable finance by 2030 to assist with transition to zero-emission technologies.[28]

NatWest is working to support the transition to net zero across a range of sectors. It has provided a cumulative total of

£62 billion

climate and sustainable funding and financing against targets of £100 billion between July 2021 and the end of 2025.

In April 2019, the Royal Bank of Canada (RBC) announced a commitment to facilitate

CAD$100 billion

in sustainable finance by 2025. When RBC surpassed its goal in two years, the bank increased its commitment to facilitate CAD$500 billion in sustainable finance by 2025. In 2023, RBC had facilitated CAD$29 billion in green finance (e.g. a green loan or bond) as part of its commitment.[29]

By investing in climate transition and adaptation finance, banks can capture lucrative opportunities and become recognized as drivers of change.

[27] Standard Chartered, "Standard Chartered announces interim targets and methodology for pathway to net zero by 2050" (2021).
[28] Industry Leaders Magazine, "HSBC commits nearly $1 trillion to achieve net zero emissions by 2050" (2020).
[29] RBC, "ESG Report" (2023).

Four key areas of opportunity

Unlocking potential opportunities and benefits by investing in sustainable finance can be achieved through innovation and **becoming a leader.** By taking a leadership role through the support of sustainable initiatives, banks can **tap into new growth opportunities** and **build a competitive edge.**

Banks around the globe that have embraced this approach are **weaving sustainable finance into everything they do.** They're not just following new regulations; they're embracing them, driving a transformation in their business operations and the investments they support.

Success for banks in the shift to a decarbonized global economy requires **a swift supercharging of sustainable investments,** which will likely create new jobs, decarbonize industries and support the development and expansion of new ones. But even more importantly, banks will need to understand that transition and adaptation should become mundane and 'business as usual'. Most of their customers will experience change in their products, services, markets and supply chains and the largest opportunity of all is to support that transition and adaptation.

KPMG has identified four essential areas of sustainable finance that present examples of how banks can crystallize their sustainability lens: agriculture, adaptation, infrastructure and retail housing. We identified these four based on their climate impacts, the importance within bank balance sheets and the difference they make to banks' customers and stakeholders.

They are also important for their impact on everyday life: "Is my food sustainably sourced? Where does my energy come from? Is the energy I consume affordable and clean? How do I keep my family warm (or cool) and manage the costs of my household? What impact am I making on the environment each day?" These basic questions can help inform the decisions banks make with a climate-first mindset.

Agricultural finance

Agriculture finance is vital not just because of its contribution to emissions, but also in climate change adaptation and mitigation efforts, supporting sustainable practices that enhance resilience against climate impacts. It enables investments in technologies and practices crucial for helping reduce emissions, improving food security, and promoting environmental sustainability in agriculture.

What is agricultural finance?

- Agriculture finance comprises financial services tailored for farming and related activities.
- It includes loans for inputs and equipment, targets clean water and good soil health, may promote organic methods, provides insurance against risks like droughts and pests, funds investments in infrastructure like irrigation and storage, provides funding along the value chain from production to marketing, and facilitates training to boost productivity and sustainability in agriculture.
- This finance supports farmers and agribusinesses, enhances food security and long-term sustainable farming and promotes rural development.

Why is it important?

- Agriculture contributes 12 percent[30] of total emissions, with projected increases of 30–40 percent[31] by 2050 without intervention.
- Agribusiness is fundamental to helping ensure a stable food supply and contributes significantly to the economies of many countries, particularly those with large rural populations. Financing is essential for these businesses to invest in modern technologies, sustainable practices, and infrastructure improvements that enhance productivity and resilience.
- Equitable access to financial services empowers smallholder farmers and rural communities to participate in and benefit from a sustainable agricultural shift.
- Agriculture finance contributes to farm resilience and adaptation to changing climate and weather patterns, by funding developments on the farm and in the laboratory.

What is the size of agricultural finance?

- Agriculture is one of the world's largest industry. It employs more than one billion people and generates over $1.3 trillion dollars worth of food annually. Pasture and cropland occupy around 50 percent of the Earth's habitable land and provides habitat and food for a multitude of species.[32]
- The agricultural finance market involves annual investments, estimated at approximately US$400 billion,[33] covering a range of financial services crucial for supporting agricultural productivity, and sustainability worldwide.
- Investment needs: The Agriculture, Forestry and Other Land Use (AFOLU) sector, crucial for decarbonization, received only 3 percent[34] of total climate finance in 2021/2022, predominantly from public sources, with private financing contributing just 1 percent[35] in 2020.

[30] Statista, "Agricultural emissions worldwide — statistics and facts" (2024).
[31] Intergovernmental Panel on Climate Change, "Special Report on Climate Change and Land" (2019).
[32] WWF, "Sustainable Agriculture" (2024).
[33] International Fund for Agricultural Development, "Transforming Global Food Systems: $400 billion needed per year while doing nothing could cost $12 trillion" (2023).
[34] Nature4Climate, "Nature-based solutions receive only 37 percent of the financing needed to reach global climate goals" (2024).
[35] Climate Policy Initiative, "Landscape of Climate Finance for Agriculture, Forestry, Other Land Uses and Fisheries" (2022).

The opportunity for banks

The agricultural sector is increasingly adopting new technologies and innovations, such as precision farming, which uses technology to apply water, fertilizers and pesticides more efficiently, thereby reducing emissions. Agroforestry, which involves integrating trees into farming systems, can help to sequester carbon, improve soil health and enhance biodiversity.

Developing countries represent a viable market through climate-resilient agriculture projects, including drought-resistant crops and water-efficient farming, as well as urban adaptation infrastructure, such as flood management systems in growing cities.

By investing in these areas, banks can stay at the forefront of innovation and capture new opportunities. This "natural capital" has long-term revenue potential if achieved sustainably.

Agroforestry, which involves integrating trees into farming systems, can help to sequester carbon, improve soil health and enhance biodiversity.

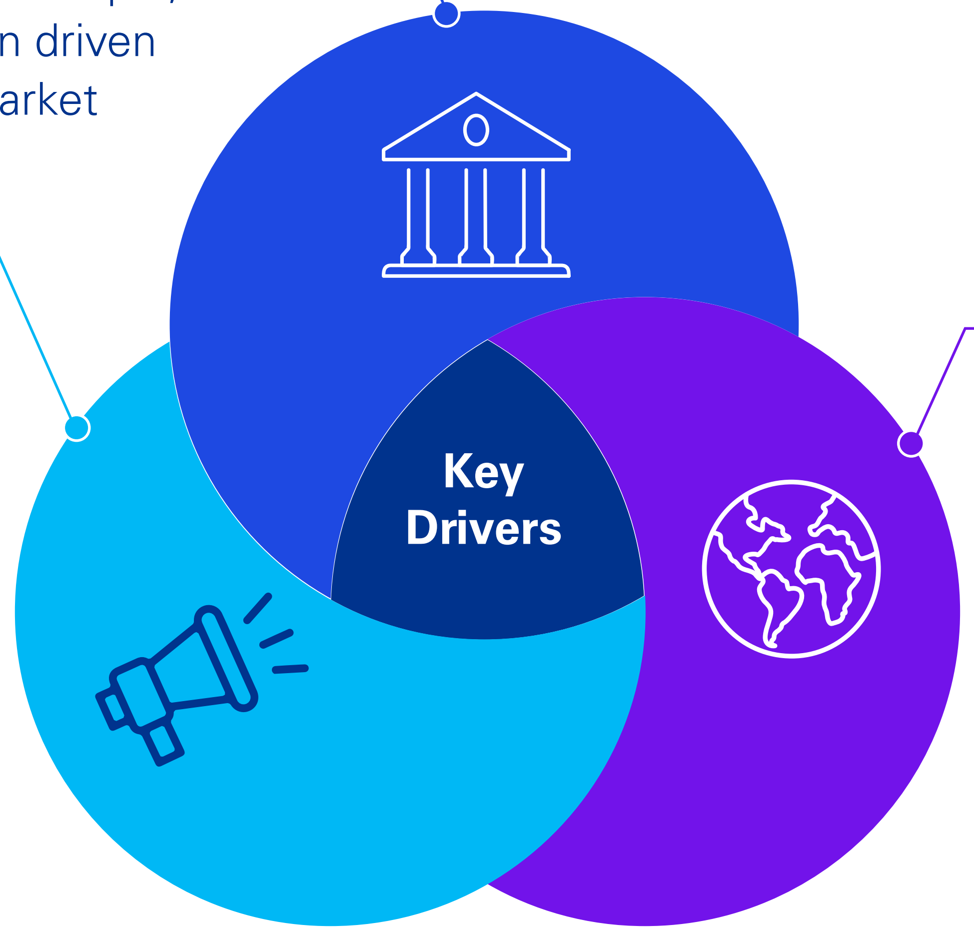
Key drivers for agricultural finance

Regulatory standards

- **Clean water standards:** Governments mandate practices that reduce runoff, manage waste and use water efficiently, requiring significant investment supported by targeting finance.
- **EU standards and extraterritorial influence:** The EU's stringent environmental standards have a global impact. Companies often impose these standards on their suppliers worldwide. For example, in New Zealand, dairy cooperatives, are often driven to meet these high standards to maintain market access and consumer trust.

Market and consumer pressures

- **Demand for sustainable products and global supply chain requirements:** Multinational corporations require suppliers to adhere to strict standards, enhancing brand reputation and meeting consumer demands for ethical products. For example, applying EU standards globally throughout an organization, helping raise agricultural practices.



Lack of global regulation

- Many regions lack stringent regulations, leading to environmental and labor issues. Consumer and commercial pressures drive improvements with financial tools, such as sustainability-linked loans (SLLs) incentivizing better practices, even without strict local laws.

Agriculture finance in action

Bank of New Zealand — Sustainability-linked loans

- Bank of New Zealand offers sustainability-linked loans (SLLs) to encourage environmental and social improvements within various sectors, particularly agribusiness.
- These loans provide financial incentives, such as reduced interest rates, for businesses that meet specific targets.
- These targets often include reducing greenhouse gas emissions, enhancing biodiversity, improving water quality and advancing social outcomes like labor practices and community benefits.
- The program is positioning the bank as a market leader in the agriculture finance industry.[36]

Tropical Forest Alliance

- The Tropical Forest Alliance is a multistakeholder partnership platform initiated to support the implementation of private-sector commitments to remove deforestation from palm oil, beef, soy and pulp/paper supply chains.
- Hosted by the World Economic Forum with 170+ alliance partners, the purpose is to advance the world's transition to deforestation-free commodity supply chains.
- In the run up to COP26 in Glasgow, the US and UK governments convened 13 of the world's largest agricultural trading and processing companies and helped catalyze a Joint Statement issued by the companies, committing them to delivering a shared roadmap for accelerated action within their supply chains to halt commodity-linked deforestation in line with a 1.5°C pathway.[37]

Lloyds Bank — Soil Association Exchange

- Lloyds Bank launched a pilot scheme designed to help British farmers accelerate their transition to net zero and identify financial and/or environmental advantages for their land.
- The bank helped one thousand of its largest agriculture customers improve the ecological footprint and overall sustainability of their operations.
- The Exchange covers soil health, carbon emissions, water quality, biodiversity, animal health, and the social and community impacts of the farm. The pilot also aimed to capture lessons from farmers to help create advice, guidance and support that can be applied across the agriculture industry.
- Lloyds Bank, AMC and Bank of Scotland provided around £1.6 billion in financial support between 2020 and 2022.[38]

Santander — Atgro

- In September 2024, Santander and Atitlan partnered to launch Atgro, a new global investment platform aimed at driving sustainable agricultural projects.
- The fund starts with initial contributions of €200 million from Santander and €50 million from Atitlan, with a goal of exceeding €500 million by attracting additional investors. This partnership underscores a long-term commitment to transforming the agrifood sector globally.[39]
- Atgro will focus on investments in "superfoods" and sustainable farming practices across Europe, the Americas, Africa and Asia.
- The platform's first projects include Atitlan's existing investments in 3,000 hectares of pistachio trees and a majority stake in 5,000 hectares of vineyards managed by Ecosac, Peru's second-largest grape exporter.[40]

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[36] BNZ Business Banking, "Sustainability Linked Loans" (2024).
[37] Tropical Forest Alliance, "Tropical Forest Alliance" (2024).
[38] Lloyds Banking Group, "Lloyds Bank launches sustainability support for agriculture sector" (2022).
[39] Santander, "Santander and Atitlan launch Atgro, a platform for investing over EUR 500 million in agricultural projects" (2024).
[40] Qorus Global "Santander and Atitlan launch Atgro, a €500 million agricultural investment platform" (2024).

Adaptation finance

Adaptation finance refers to financial resources dedicated to helping countries, communities and businesses adapt to the impacts of climate change. This can include funding for infrastructure improvements, new technologies and capacity-building initiatives that increase resilience to climate change impacts. An ideal adaptation model combines funding from **three key sectors: the public sector, the private sector and financial services sector**.

What is it?

The World Resources Institute describes adaptation finance as "finance for actions that help communities reduce the risks they face and harm they might suffer from climate hazards like storms or droughts. It pays for things like stronger housing, more drought-tolerant crops, social safety nets, or improved decision-making around climate-related risks… it includes both finance from developed to developing countries… as well as finance that governments — both developing and developed — invest to cover the costs of climate change impacts within their own borders. Adaptation finance can also come from private sources."[41]

While we have seen plenty of mitigation finance to address root causes of climate change (e.g. energy transition and innovative technologies to reduce carbon emissions), adaptation finance helps to **adapt** to our changing climate reality and defend ecosystems, economies, supply chains, communities and human lives.

Why is it important?

Adaptation finance focuses on preparing for and adjusting to the current and future consequences of a changing climate. Although all nations will need to invest in adaptation, the need for adaptation finance is greatest in emerging and developing economies, where risk exposure is disproportionate to the detrimental effects of climate change. Adaptation finance is critical to:

- Address immediate and future climate impacts (e.g. rising sea levels)
- Protect vulnerable communities (e.g. support agriculture and food security through climate-resilient farming practices)
- Reduce economic losses (e.g. strengthen infrastructure to better withstand extreme weather)
- Support sustainable development (e.g. fund better health systems to contain the spread of diseases linked to climate change, such as malaria)
- Build resilience for future generations (e.g. protect natural resources)
- Prevent humanitarian crises and conflict (e.g. address root causes of vulnerability)
- Meet international climate goals (e.g. the Paris Agreement)
- Bridge the adaptation finance gap

The UN Environment Programme (UNEP) estimated in its *2023 Adaptation Gap Report* that the adaptation finance gap now stands at US$194–366 billion per year, with adaptation finance needs in developing countries likely to be 10–18 times as great as finance flows — more than 50 percent higher than the previous range estimate.[42] At the same time, new adaptation projects are being added more slowly and the number of new national adaptation planning instruments is plateauing.

This drives the need for a focus on adaptation where, if capital is mobilized quickly enough by the three key sectors, we have the opportunity to build more resilient emerging economies.

What is the size of adaptation finance?

It has been estimated that for every US$1 spent on adaptation, up to US$12 of economic benefit could be generated this decade, showing that value can also be created through adaptation investments. (The figure does not include the co-benefits that could come from the multiplier effect of investing).[43]

Global adaption finance capital needs to be increased and moved in the right direction. Global climate adaptation capital was only around US$63 billion (2021/2022, the latest figures available) and it lags far behind mitigation finance, which received US$1.2 trillion in funds over the same period.[44]

[41] World Resources Institute, "Adaptation Finance: 11 Key Questions, Answered" (2022).
[42] The UN Environment Programme, "2023 Adaptation Gap Report" (2023).
[43] The Business Times, "Expect up to 12x returns for every dollar spent on climate adaptation: StanChart" (2024).
[44] Global Landscape of Climate Finance, "Climate Policy Initiative" (2023).

The UN's Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed finds that "progress on adaptation is slowing across all three areas annually assessed — finance, planning and implementation — when it should be rapidly accelerating."[45]

The report goes on to declare that "Based on a detailed update, the adaptation finance gap now stands at US$194–366 billion per year, with adaptation finance needs in developing countries likely to be 10 to 18 times as great as finance flows — over 50 percent higher than the previous range estimate. At the same time, new adaptation projects are being added more slowly and the number of new national adaptation planning instruments is plateauing."[46]

Nonetheless, adaptation remains a critical component of the long-term global response to climate change to protect people, livelihoods and ecosystems.[47] Banks can't do it alone, but they can demonstrate leadership by taking action, sharing knowledge, and creating partnerships and joint ventures, and they can do it now.

The opportunity for banks

Investing in adaptation finance helps banks manage climate-related risks in their portfolios. As physical risks (floods, storms, heatwaves) become more prevalent, loans and investments in vulnerable geographies could underperform. By financing adaptation measures, banks can reduce the risk of default and losses related to climate shocks.

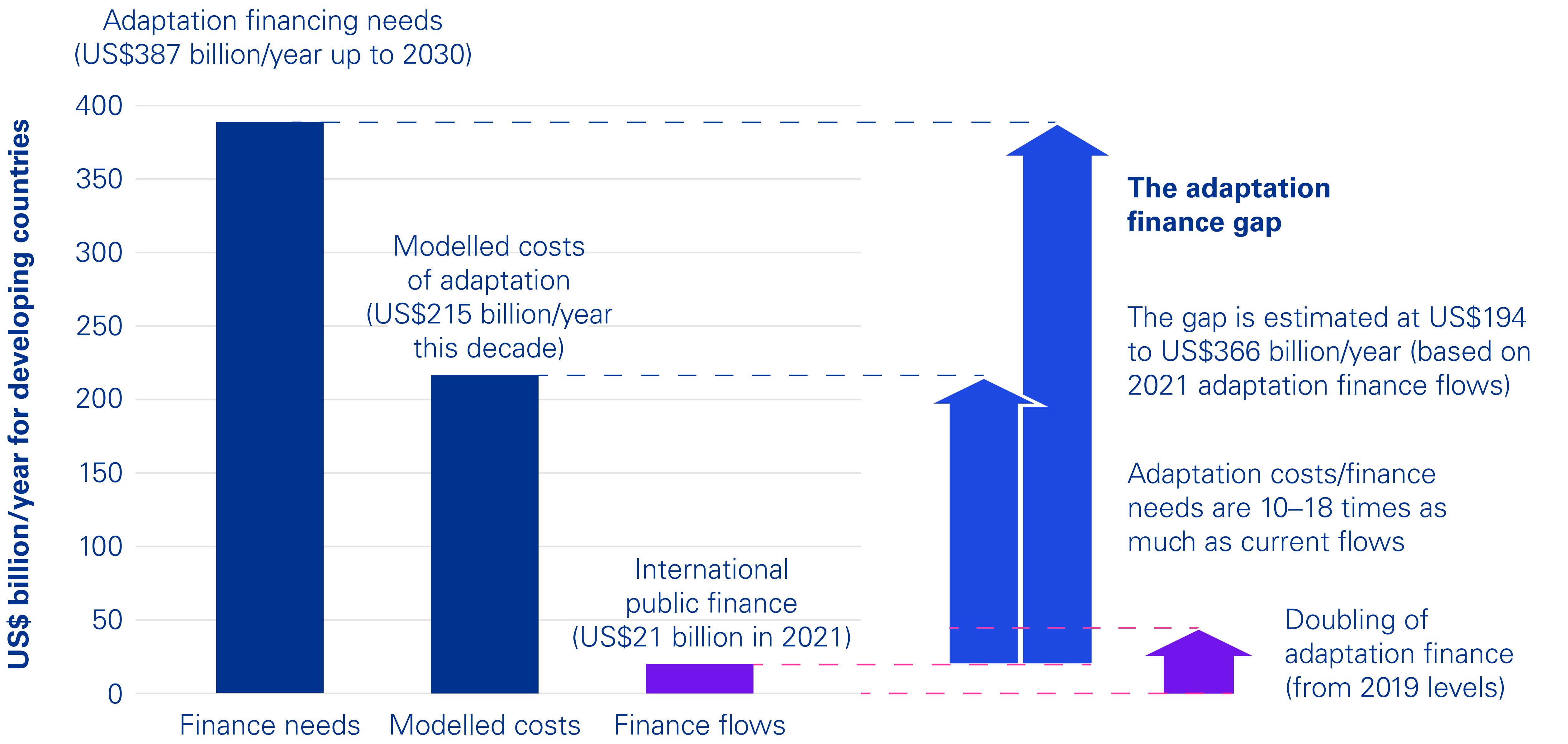
Banks can create specialized products to meet growing demand for financing adaptation projects. For example, sustainability-linked loans offer interest rate discounts for achieving environmental milestones.

Adaptation finance can stimulate investment in technologies designed to mitigate the impacts of climate change, such as advanced irrigation systems, flood forecasting technology, or resilient building materials. Banks that fund these innovations can benefit from early investments in growing sectors and create future revenue streams.

Banks can leverage blended finance models, combining public funds with private capital to de-risk adaptation projects. Public finance institutions such as the World Bank or Green Climate Fund, can offer concessional funding that banks can tap into, lowering overall project risk and enhancing returns on private capital.

Of course, it also helps banks meet their sustainability targets.

Comparison of adaptation financing needs, modeled costs and international public adaptation finance flows in developing countries[48]



Note: Values for needs and flows are for this decade, while international public finance flows are for 2021. Domestic and private finance flows are excluded.

[45] The UN Environment Programme, "2023 Adaptation Gap Report" (2023).
[46] Ibid.
[47] United Nations Climate Change, "Introduction to adaptation and resilience/loss and damage" (2024).
[48] The UN Environment Programme, "2023 Adaptation Gap Report" (2023).

Adaptation finance in action

Santander and the Brazilian Amazon

- Santander promotes the protection of the Amazon rainforest and sustainable development. The bans seeks to minimize the social and environmental impacts of its financing. Santander is involved in alliances and has developed innovative nature-based solutions in Brazil.
- With a selection of shareholders, Santander created a new forest company, Biomas, with a goal to plant trees, protect and restore landmass across Brazil and reduce CO_2e from the atmosphere.
- Santander became the first bank to join the **UNEP Innovative Finance for the Amazon, Cerrado and Chaco (IFACC) alliance,** which serves as the "go-to" team for banks, companies and investors seeking to expand innovative finance for deforestation/ conversion-free beef and soy in these regions. Under IFACC, Santander issued two financial structures that work as revolving credit facilities: (1) **BRL17 million** aimed at agroforestry and nontimber forest product cooperatives and eco-businesses in five biomes in Brazil, with a strong presence in the Amazon; and (2) **US$47.24 million** aimed at producing deforestation-free soy in Cerrado. This zero-deforestation soy finance initiative won multiple awards and is currently realizing $4 of impact on the ground for every $1 dollar invested.
- Santander is a member of the **Brazil NBS Investment Collaborative,** created to accelerate large-scale implementation of nature-based solutions in Brazil.
- Santander is also a member of the **Amazon Finance Network,** an alliance that brings together 18 financial institutions from 9 countries to increase investment flows, mobilize capital, share knowledge on innovative financial solutions, and generate synergies with the public sector, and ultimately generate sustainable impact across the Amazon region.[49]

Standard Chartered (in collaboration with KPMG and UNDRR)

- In 2024, Standard Charter collaborated with KPMG LLP and the United Nations Disaster Risk Reduction (UNDRR) to produce a focused guide to provide clarity on what constitutes adaptation and resilience-building investment.
- The guide maps more than 100 investable activities across adaptation and resilience, including: climate-resilient crops, vertical farming, natural flood protection, water conservation and efficiency measures, public hospital infrastructure investment, renewable energy storage solutions, and mangrove conservation and replanting.[50]
- See page 35 for a more detailed overview on *The Guide for Adaptation and Resilience Finance.*

World Bank: Adaptation investments in Africa

- In the face of increasing climate-related risks, the World Bank works with African countries to advance efforts to adopt renewable energy, climate-smart agriculture, and green infrastructure.
- The Africa Climate Business Plan, launched in 2016, has delivered significant results in the areas of climate-smart agriculture, integrated watershed management, climate-smart ocean economies, climate resilience in coastal zones, social development, and renewable energy.
- The World Bank Group pledged **US$22.5 billion** for climate adaptation and mitigation in Africa over five years from 2021–2025.[51]

[49] Santander, "Santander and the Brazilian Amazon" (2021).
[50] Standard Charter, "Standard Chartered, KPMG and UNDRR launch adaptation and resilience financing roadmap to galvanise vital funding efforts ahead of COP29" (April 2024).
[51] World Bank Group, "Supporting Africa's Transformation: World Bank Africa Strategy for 2019–2023" (2020).

HSBC

- In 2012, HSBC co-launched the **HSBC Water Programme** in partnership with WaterAid, Earthwatch and WWF, and provided **US$150 million** in funding.
- In 2024, HSBC India partnered with The Social Lab (TSL) and United Way Mumbai (UWM) to install water kiosks in high-traffic locations across five major cities facing severe drinking water shortages. Operational 24/7, the kiosks can dispense more than 500 liters of clean drinking water daily at each location, benefiting thousands of individuals and helping them combat dehydration and heat strokes during the sweltering summer months.[52]
- In 2021, HSBC entered a joint venture to create Pentagreen Capital, a debt financing platform dedicated to accelerating the development of sustainable infrastructure in Asia. Using a proprietary ESG framework, Pentagreen **aims to deploy blended finance at scale in over US$1 billion of loans within five years** to unlock and crowd in commercial capital for marginally bankable projects.
- **US$30 million** was committed to its first transaction — six solar projects in the Philippines.[53]

Green Climate Fund

- The world's largest fund for climate finance was established within the framework of the United Nations Framework Convention on Climate Change (UNFCCC).
- With additional pledges received at COP28, the fund's total pledges stood at a record **US$12.8 billion from 31 countries.**
- With more than 200 projects in developing countries, the Fund aims for a 50:50 balance between adaptation and mitigation.
- Several banks comprise the Fund's 134 Accredited Entities, including, for example, Asian Development Bank, BNDES/ Brazilian Development Bank, Deutsche Bank AG, European Investment Bank, HSBC Holdings plc, MUFG Bank.[54]

Asian Development Bank

- Asian Development Bank (ADB) is committed to enhancing policy-based lending to support green, resilient and inclusive recovery, focusing on energy transition, climate resilience and nature-positive reforms. This includes financing renewable energy infrastructure, leveraging private sector investments and improving crisis response mechanisms.
- ADB will implement best practice guidance, expanded staff training, technical assistance and new policy-based lending programs aimed at climate adaptation, mitigation and long-term resilience building.
- From 2022 to 2024, ADB has committed **up to US$18 billion** in policy-based lending to support these initiatives. These will support developing member countries as they undertake policy reforms and fill gaps in their development financing requirements.[55]

[52] CSR Times, "HSBC India, together with The Social Lab (TSL) and United Way Mumbai, installs water kiosks to provide safe drinking water across five cities" (2024).
[53] Pentagreen, "Pentagreen" (2024).
[54] Green Climate Fund, "Green Climate Fund" (2024).
[55] Asian Development Bank, "Climate Change and Disaster Risk Management" (2024).

Infrastructure finance

Investing in sustainable infrastructure is critical for mitigating the impact of climate change. Sustainable investment in the construction and maintenance of infrastructure will help to develop new and more sustainable methods and technologies, leading to a lower carbon footprint.

What is infrastructure finance?

- Infrastructure finance refers to the financing of projects or companies involved in constructing and maintaining infrastructure.
- It is often led by governments and paid for by public funds. However, the private sector is becoming increasingly involved as governments deal with significant fiscal difficulties.
- As the United Nations Global Compact estimates that between US$3 trillion and US$5 trillion of spending is required annually through 2030 to meet the SDGs (and some sources declaring even higher dollar amounts), it is unquestionable that massive funding is required to support the transition to sustainable development. As governments become more and more strained by macroeconomic and geopolitical events, financial institutions and private investments emerge as increasingly important collaborators — and funders.[56]

Why is it important?

- The scale of the world's infrastructure needs is substantial, and this is likely to increase as communities feel a greater impact from climate change.
- Infrastructure emits 79 percent of all greenhouse gas emissions worldwide, with most associated with energy, buildings and transport across various stages of the infrastructure cycle.[57]
- Infrastructure is vulnerable to climate change, especially in countries where investment has been low and existing infrastructure is aging. Climate change will only worsen the impact, thus making it critical that new infrastructure is built properly and using sustainable means.
- In 2023, infrastructure funds raised US$87.75 billion, which was actually down 50.2 percent from 2022 outlining the impact that inflation rates and global events have had on innovative infrastructure investments.[58]

What is the size of infrastructure finance?

- Infrastructure plays an enormous role in the functioning and long-term development of society.
- It is estimated that infrastructure projects worldwide will exceed US$9 trillion in 2025, and a significant percentage of GDP will be spent solely on this area and its supporting activities.[59]
- Vast sums will need to be invested for sustainable infrastructure, as methods are often more costly and can be seen as less desirable than existing methods.
- It's estimated 65 percent of current spending on physical assets for energy and land-use systems goes towards high-emissions assets. However, it is predicted that over the next 30 years, an average of 70 percent of spending would be on low-emission assets.

[56] United Nations Global Compact "Sustainable Finance: corporate finance and investments as a catalyst for growth and social impact" (2024).
[57] UN Environment Programme "New report reveals how infrastructure defines our climate" (2021).
[58] S&P Global "Infrastructure fundraising poised for recovery after slow 2023" (2024).
[59] Infrastructure Outlook "Forecasting infrastructure investment needs and gaps" (2018).

Sustainable infrastructure:

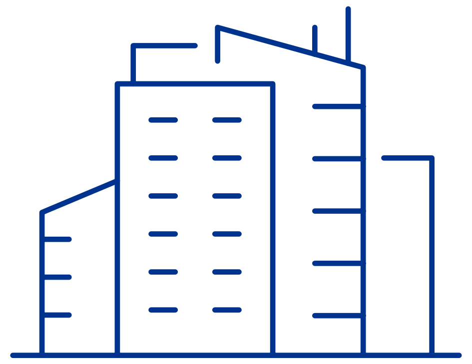
- Financing more sustainable infrastructure should be another priority area for banks, particularly as it is essential for the wellbeing of millions of people and sustaining a planet to live on. According to the World Bank, there are nearly 700 million people around the globe still living without electricity, 2.3 billion without access to drinking water, 3.6 billion living in unsanitary conditions and 450 million are located beyond the range of a broadband signal.[60]
- Some estimates forecast that US$94 trillion in new infrastructure investment is needed globally by 2040. Today, there is an estimated US$18 trillion investment gap, with road and electricity industries representing the largest infrastructure investment gaps respectively. Funding sustainable infrastructure projects that promote environmental sustainability, social inclusivity and economic resilience such as renewable energy, energy efficiency, sustainable transport and water management, can reduce environmental impact and enhance long-term sustainability.

The opportunity for banks

Sustainable infrastructure investments have long-term potential, which can provide banks with diversified, stable cash flows and consistent revenue streams over time. By 2040, global demand for new infrastructure could amount to more than US$94 trillion and banks should therefore view the investment gap as an opportunity for sustainable growth.[61]

Investing in sustainable infrastructure can be a great investment opportunity for generating healthy economic returns, while reducing risks and negative externalities on a micro and macro level.

Infrastructure emits

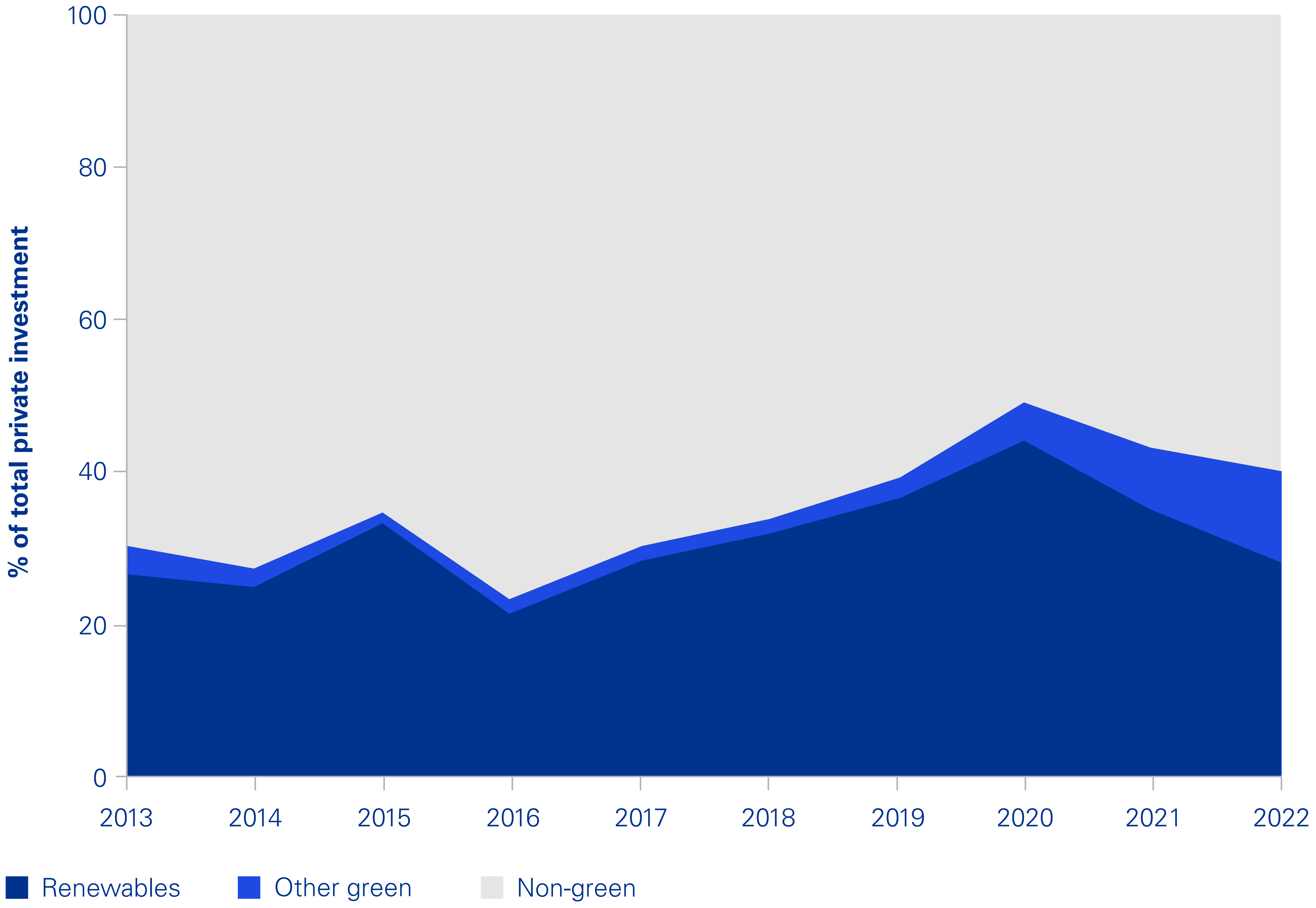


79%

of all greenhouse gas emissions worldwide, with most associated with energy, buildings and transport across various stages of the infrastructure cycle.[62]

Green and non-green private investment in infrastructure projects[63]

(% of total private investment in infrastructure projects)



Source: Global Infrastructure Hub based on Realfin data

[60] World Bank, "Progress on basic energy access reverses for first time in a decade" (2024).
[61] Global Infrastructure Outlook, "Global Infrastructure Outlook" (2024).
[62] UN Environment Programme, "New report reveals how infrastructure defines our climate." (2021).
[63] Global Infrastructure Hub, "Infrastructure Monitor 2023"(2023).

Infrastructure finance in action

Ocean Winds & BNP Paribas

- A group of 20 commercial banks, with BNP Paribas acting as Mandated Lead Arranger and Hedging Bank, recently agreed a £2 billion financing arrangement with Ocean Winds to build 60 new wind turbines for the Moray West offshore wind farm off the northeast coast of Scotland.
- This is the first offshore windfarm in the UK to enter into a Corporate Power Purchase Agreement (CPPA), allowing businesses to purchase electricity directly from the turbines.
- A Contract for Difference (CfD) was included as part of the agreement, guaranteeing a set price for electricity.
- This demonstrates the positive role banks and private investment can play in developing greener infrastructure.[64]

Aguas Horizonte

- A syndicate of 14 banks, including Mizuho (lender and financial advisor), MUFG, Bank of America and SMBC, provided a loan of over US$1.8 billion for investment in a new desalination plant and high-pressure water pipeline in Chile.
- Led by the Aguas Horizonte, this project will provide desalinated water to Codelco, Chile's state-owned copper mining company and previously the largest copper mining company in the world.
- This will be important in supporting their copper mining operations. Given copper's critical role in decarbonization and electrification, this project has real potential for positive sustainable impact.[65]

Neom Green Hydrogen Project

- A group of 23 banks, led and coordinated by Standard Chartered, arranged financing of US$8.5 billion for the Neom Green Hydrogen Project; US$6.1 million of this is non-recourse financing.
- This project will build the world's largest green hydrogen plant in Saudi Arabia to produce green ammonia and green hydrogen, with an aim to have begun operations by late 2026.
- This will help support transportation and industrial sectors globally in their shift towards decarbonization.
- The project was given the Middle East Project Finance House of the Year at the Sustainable Infrastructure Awards 2024 to recognize its positive potential.[66]

Finance to Accelerate the Sustainable Transition-Infrastructure

- The Global Infrastructure Facility (GIF), which was established to address the lack of project preparation and reduce the investment gap, partnered with HSBC, IFC, OECD and the Climate Policy Initiative on the 'FAST-Infra'. This is an industry-led, public-private initiative with two main components:

1. To develop a sustainable infrastructure labeling system
2. Target financial interventions to expand private infrastructure finance in developing countries, particularly from institutional investors
3. FAST-Infra Label is a tool that identifies truly sustainable assets, unlocking private capital for a more sustainable future.[67]

[64] BNP Paribas, "Ocean Winds: innovative financing for a pioneering offshore wind project" (2024).
[65] Latin Finance, "Loan of the year: Aguas Horzizonte"(2023).
[66] The Asset, "Sustainable Infrastructure Awards 2024: Financial might is right for green projects" (2024).
[67] World Bank, "FAST-Infra: Promoting sustainable growth through common standards on sustainability" (2021).

Client story

The Hong Kong Mortgage Corporation's innovative approach to sustainable infrastructure financing

The Hong Kong Mortgage Corporation (HKMC) is focused on enhancing Hong Kong's financial landscape, particularly in infrastructure financing. The need for innovative financing solutions was important to support infrastructure projects that could drive economic growth and sustainability within Hong Kong (SAR), China.

HKMC identified an opportunity to sponsor two infrastructure loan-backed securitization transactions in 2023 and 2024. Valued at US$404.8 million and US$423.3 million respectively, these transactions were pioneering as the first and second issuances of their kind out of Hong Kong (SAR), China. The inclusion of sustainability tranches — US$100 million in the first issuance and US$107 million in the second — allowed HKMC to align with global sustainability standards, thereby attracting a broader range of investors interested in socially responsible investments.[68]

The transactions successfully provided investors with access to a unique portfolio of infrastructure loan obligations, offering diversified exposure across various sectors, regions, and projects. A strong response from investors, including participation from the Asian Infrastructure Investment Bank as an anchor investor, underscored the market's confidence in these innovative financing solutions. Additionally, the incorporation of pre-issuance impact reports and independent second-party opinions enhanced transparency, allowing investors to assess the environmental and social benefits of the underlying projects.

To support these initiatives, HKMC engaged KPMG China to establish a comprehensive climate strategy. KPMG professionals were instrumental in helping conduct emission baselining, scenario analysis, climate risk assessment, and portfolio resilience analysis. Additionally, KPMG China provided a capability assessment and developed an investment decision-making guide tailored for HKMC's infrastructure-loan portfolio. This collaboration helped to strengthen HKMC's climate strategy and helped to ensure that the securitization transactions were aligned with best practices in sustainability and risk management.

HKMC was able to effectively navigate the complexities of the debt capital market while promoting sustainable infrastructure financing, ultimately helping to contribute to the development of a more resilient and responsible financial ecosystem in Hong Kong (SAR), China.

The inclusion of sustainability tranches —

US$100M in the first issuance and

US$107M in the second

allowed HKMC to align with global sustainability standards, thereby attracting a broader range of investors interested in socially responsible investments.

[68] The Hong Kong Mortgage Corporation Limited. "Infrastructure Financing and Securitisation." 2021.

Green retail housing finance

As outlined by the UNEP in January 2024, when including the construction industry, the buildings sector is responsible for more than 37 percent of GHG emissions globally. However, the buildings sector is also the most cost-effective and impactful sector, long term, to address climate risk. With more than half of the world's population now living in urban areas,[69] housing is becoming more in demand with significantly more urgency to be sustainable over the long term.

What is it?

- Green retail housing refers to efforts to make the financing and construction of residential buildings more environmentally sustainable. This involves incorporating energy-efficient features, water-conservation measures and sustainable materials into new and existing homes.
- It also includes promoting 'green' mortgages (when a bank or lender offers the buyer preferential terms if they can demonstrate that the property they are borrowing for meets certain environmental criteria) and other sustainable home financial products that incentivize homeowners to invest in sustainable upgrades, like retrofitting.
- The potential economic benefits to retrofitting existing homes are largely untapped compared to the required runway.

Why is it important?

Home ownership and usership are swirling economies where people can make an impact on decarbonization and become empowered to take action:

- **Climate change mitigation:** Buildings are responsible for a significant portion of global greenhouse gas emissions, primarily from energy consumption and construction materials. Green retail housing can help reduce these emissions by promoting energy efficiency and sustainable building practices.
- **Resource conservation:** Green retail housing can help conserve water resources by promoting water-efficient fixtures and landscaping.
- **Health and well-being:** Sustainable homes can provide a healthier and more comfortable living environment for occupants by reducing exposure to pollutants and improving indoor air quality.

What is the size of the global green retail market?

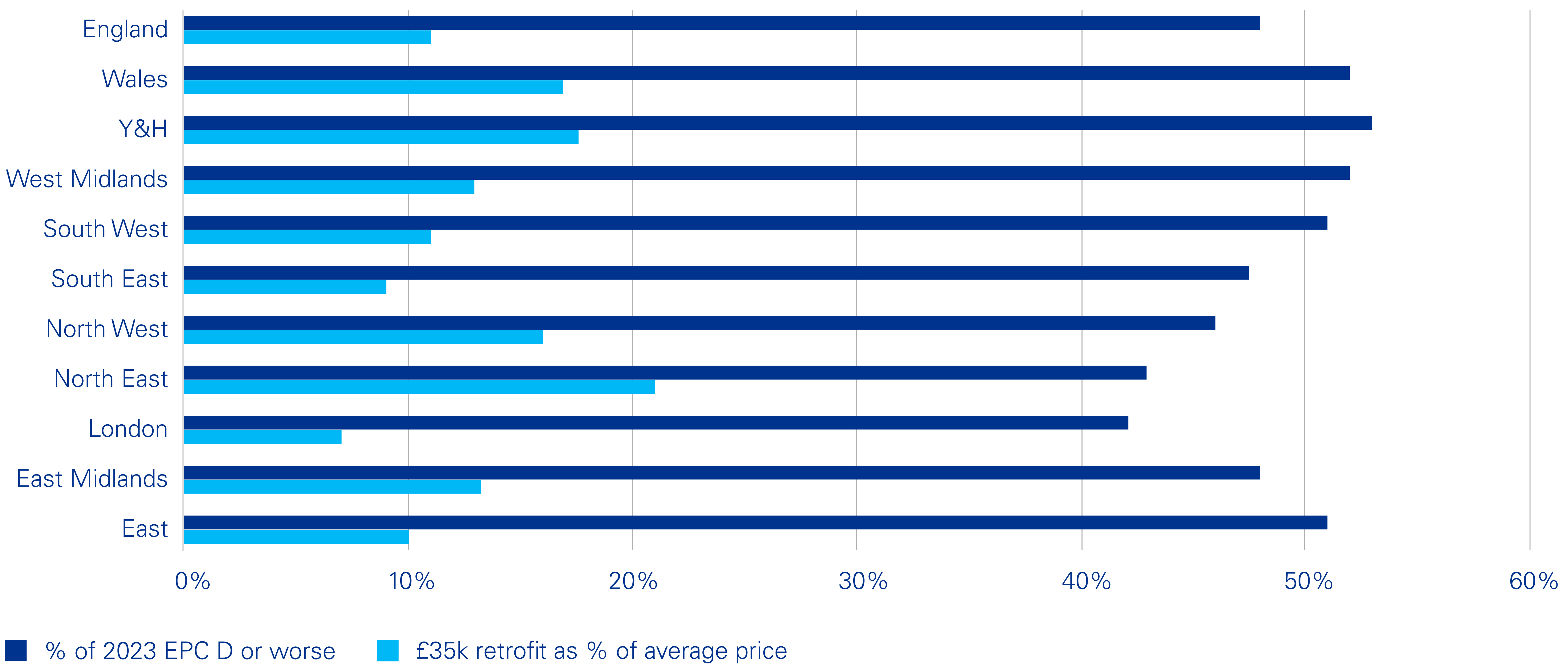
- The World Economic Forum estimates that the green building revolution could open a US$1.8 trillion global market opportunity by 2030.[70]
- The Global Green Retail Market is estimated to have grown from US$350 billion in 2015 to around US$550 billion in 2024, with estimates extending to 2028 (US$1,257 billion) and 2034 (US$1,374 billion).[71]
- Single-family housing green buildings market size expected to grow from US$138.74 billion in 2023 to US$275.36 billion in 2028.[72]
- The global container homes market size is predicted to increase from US$66.05 billion in 2024 to US$70.49 billion in 2025 and is projected to surpass around US$126.57 billion by 2034, poised to grow at a CAGR of 6.72 percent between 2024 and 2034.[73]
- The global smart home market size was evaluated at US$98.05 billion in 2023 and is expected to be worth around US$581.85 billion by 2032, growing at a CAGR of 21.88 percent from 2023 to 2032. The growing adoption of smart devices in homes with rising disposable income is boosting the growth of the smart home market.[74]
- Research shows that UK homebuyers will pay up to a 20 percent premium for a low-carbon home.[75]

[69] World Economic Forum, "Green Building Revolution Could Open $1.8 Trillion Global Market Opportunity by 2030 (2024).
[70] World Economic Forum, "Green Building Revolution Could Open $1.8 Trillion Global Market Opportunity by 2030 (2024).
[71] Beech Holdings, "Investing in Eco-Friendly Properties: The Future of Property Investment" (2023).
[72] The Business Research Company, "Single-Family Housing Green Buildings Global Market Report" (2024).
[73] Precedence Research, "Container Homes Market Size, Share and Trends 2024 to 2034" (2024).
[74] Precedence Research, "Container Homes Market Size, Share and Trends 2024 to 2034" (2024).
[75] Legal & General, "Legal & General research shows buyers will pay up to 20% premium for low carbon homes" (2022).

Climate-smart construction involves using sustainable materials, improving energy efficiency and designing buildings to withstand climate change impacts. For example, green buildings often have features like solar panels, rainwater harvesting systems and green roofs.

Making existing housing more energy-efficient and helping ensure future developments are built sustainably is increasingly at the forefront of governments' and private investors' objectives. Across England and Wales alone, 48 percent of existing properties surveyed for an Energy Performance Certificate (EPC) in 2023 have an EPC rating of "D" or below. An EPC helps a home owner understand the energy performance of their home in England and Wales. An EPC of "D" indicates average energy performance and indicates the home could benefit from multiple improvements. "E", "F" and "G"-rated properties require significant upgrades. Housing, both old and new, play a role in meeting commitments to reach net zero.

Retrofit cost as % of average price and % of homes at EPC D or worse[76]



Source: JLL HM Land Registry, DLUHC (excluding new build)

[76] JLL, "Decarbonising UK housing: the regional view" (2024).

The opportunity for banks

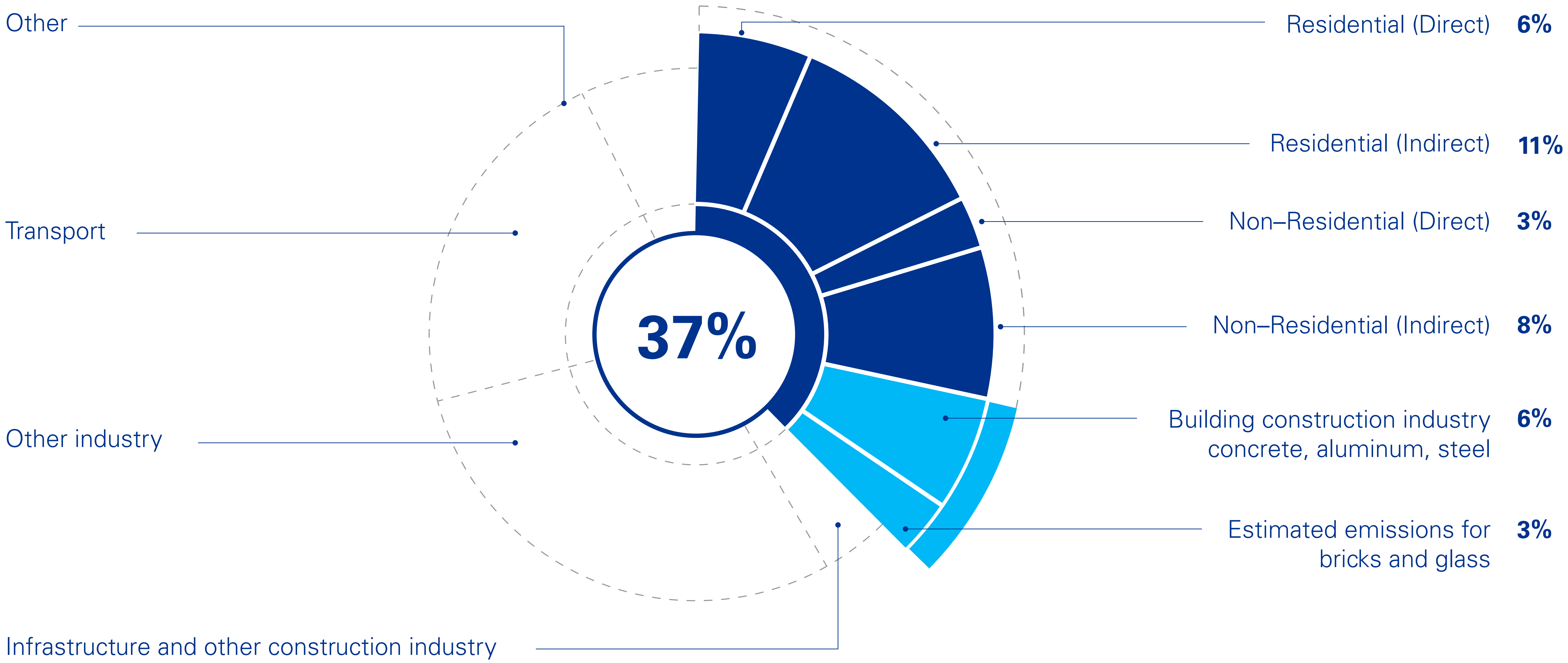
Banks have the power to revolutionize construction and direct investments into green buildings with long-term value. There is a strong business case for investing in green buildings as they sell faster on average and at a higher premium. Therefore, the benefits create a win for banks, consumers and the planet.

Globally, the world will build about

80 billion square meters

of new construction by 2030, a majority of it (all but 3 billion) in developing economies, outlining a significant investment opportunity for banks if achieved sustainably.[77]

Global share of buildings and construction operational and process CO_2 emissions, 2021[78]



The built environment sector is responsible for more than a third of global energy–related carbon emissions.

Adapted from UNEP2022.

[77] United Nations Environment Programme, "Banking on Green Buildings" (2024).
[78] United Nations Environment Programme, "Building Materials and the Climate: Constructing a New Future" (2024).

Green retail housing finance in action

The gap for transition-based home improvement finance

- Banks have struggled with green mortgage uptake. When some pilots offered customers free capital for home improvements, customers mistook this as fraudulent activity. There is a perception that needs to change, through education and through banks' customer engagement strategies.
- Many banks offer green mortgages that carry a preferential rate for EPC "A" or "B"-rated homes. However, these are set aside for remortgages or when a house is sold. They might be green, though they are not driving the transition. The energy-efficient rating is not improving; it can be perceived as rebadging normal products green. Greenwashing if counted towards external financing commitments.
- To drive the required reduction in carbon there is a gap for transition-based mortgages, whereby banks lend for retrofitting, home-improvements and increased energy efficiency. Additive action with a carbon reduction outcome.[79]

UAE green home financing

- Middle Eastern banks as with global peers are offering low-rate lending for sustainable home building and improvements, importantly including 'green' home financing products compliant with Sharia principles.
- The Dubai Islamic Bank (DIB)[80], First Abu Dhabi Bank (FAB)[81] and RakBank[82] offer financing products for sustainable new homes and existing homes, using internationally recognized sustainability criteria with FAB making use of 11 sustainability certifications to determine eligibility (including LEED (silver or above), BREEAM and Barjeel-certified homes).
- The DIB Nest product offers ancillary finance for solar panels and sustainable construction materials and offers free Takaful (Sharia aligned form of insurance) for one year.
- HSBC UAE similarly offers discounted rates for the purchase of Gold or Platinum LEED-certified properties. For non-LEED-certified properties, HSBC can assess sustainability by solar panels, energy savings, water saving measures and waste management.[83]
- The prevalence of green home financing products focused on addressing biodiversity will start to grow, with incentives and requirements for properties to incorporate water-saving features, such as low-flow plumbing fixtures, water-efficient landscaping or rainwater harvesting systems. These requirements may be outlined in a 'Green Building Standards' requirements or a bank's own product fact sheet.

EIB and Deutsche Bank launch green mortgage program

- Deutsche Bank and the European Investment Bank (EIB) Group announced a new mortgage program launched for climate-friendly housing and energy-efficient home modernization in Germany, granting discounted mortgages totaling more than €600 million.
- The EIB is supporting favorable conditions for green housing lending via a synthetic securitization of consumer loans, specifically a €150 million mezzanine securitization tranche with Deutsche Bank.
- Sustainability criteria must be met to qualify for the loan; the modernization finance requires a reduction in energy demand of the building by 30 percent.[84]

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[79] Green Finance Institute, "The way ahead for the UK's green mortgage market" August 2023.
[80] Dubai Islamic Bank, "DIB Nest" (2024).
[81] First Abu Dhabi Bank, "Help to build a greener home for future generations" (2024).
[82] RAK Bank, "Green Mortgage Finance" (2024).
[83] HSBC, "Green Home Loan" (2024).
[84] ESG Today, "EIB, Deutsche Bank launch mortgage programme for climate-friendly and energy-efficient homes" May 2024.

Client story

Greening buildings: constructing a coalition to green UK property

KPMG in the UK helped NatWest bring together the Sustainable Homes and Building Coalition to accelerate retrofitting UK's housing.[85]

Buildings represent around 20 percent of UK carbon emissions.[86] That makes 'greening' the nation's homes and offices an essential step in hitting net zero targets and achieving a low carbon future.

NatWest has a target of halving the carbon impact of its lending by 2030. It recognized that reducing emissions from the UK's buildings had a big part to play in that, with mortgages and real estate lending representing a significant proportion of the emissions on its balance sheet. The bank also recognized that greening the UK's buildings will benefit its customers. Through improvements to the energy efficiency of their own homes, customers can lower their energy bills and enhance their living environment.

Recognizing the scale of the problem, NatWest asked KPMG in the UK to support it in putting together a vision and a project plan for tangible action. The first stage was a series of internal workshops with a range of C-suite leaders from across the group.

It was clear, however, that this was a challenge that needed collective action. It was going to take different views to get a full understanding of the hurdles and potential solutions. KPMG in the UK helped the bank convene a coalition of organizations from key sectors to provide a more complete view of the issues and establish a stronger voice on greening homes.

The *Sustainable Homes and Building Coalition* was launched in July 2021, bringing together NatWest with British Gas from the energy sector, Worcester Bosch from heating/technology manufacturing, and homelessness charity Shelter for critical perspectives from broader society.

The coalition has coalesced around three key aims:

- Conduct research and map customer journeys to decarbonizing their homes, recognizing that solutions need to be accessible to all.
- Support energy-efficient start-ups and SMEs to scale.
- Accelerate the collaborative development of financial products which consumers can access, understand and use.

The first phase of activity has already resulted in a significant practical outcome — the publication of a seminal report 'Home is where the heat is' which offers timely insight, ideas and recommendations around a just transition to greener buildings.

Today, the coalition is undertaking a pilot retrofit program for a dozen homeowners who fit the 12 property archetypes outlined in the report. This will demonstrate what it takes to make the transition happen and the true challenges and opportunities facing the buildings sector in the UK.

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of UK carbon emissions. That makes 'greening' the nation's homes and offices an essential step in hitting net zero targets and achieving a low carbon future

[85] KPMG in the UK. "Greening buildings: constructing a coalition to green UK property." (September 2022).
[86] UK Green Building Council. "Embodied Carbon." (2024).

Conclusion

As the climate crises continues, the time to act is now. Although the size of the financing challenge is significant, it also brings unparalleled opportunities and return on investment. By integrating sustainability into all parts of the value chain, banks can play a pivotal role in driving the transition to a net-zero economy, help secure a sustainable future for all and realize tangible economic benefits.

The true transition can only be realized when sustainable lending becomes 'business as usual'. Leveraging sustainable finance internally by adopting sustainable practices within their operations will enable banks to realize cost savings and improved efficiency, while unlocking new business growth opportunities in parallel.

By offering more sustainable financial products, such as green bonds, sustainability-linked loans, green mortgages, and transition loans, and by engaging and supporting their customers' transition plans, banks will likely attract forward-looking and environmentally conscious investors and borrowers. Banks will harvest returns from the innovators and success stories of tomorrow while also supporting their existing customers to make necessary adaptations and changes.

As governments and regulatory bodies worldwide increasingly promote sustainable finance through incentives such as tax breaks, grants and favorable regulatory treatment, banks can take advantage of these incentives to enhance their profitability.

By shifting investments towards sustainable sectors, banks can mitigate risks related to stranded assets and regulatory penalties.

By collaborating with governments, non-profits and other financial institutions, banks can develop and promote sustainable finance initiatives more broadly.

The time is now. As the demand for sustainable finance continues to rise, banks that proactively embrace sustainable finance strategies can emerge as leaders, build strong brand recognition and develop customer loyalty by adopting a sustainability-first approach. This approach is not only a moral imperative but also a once-in-a-generation commercial opportunity that demands rapid and transformational change.

Methodology

The race to net zero is on. And financial institutions have the capability and the capital to lead the way by accelerating a system-wide transition to a net-zero economy.

Leveraging our examination of a single country's transition readiness, Banking on the climate transition, we looked outward to global financial institutions, with heightened focus on the banking industry to analyze how banks are approaching the opportunities decarbonization brings.

Using insights from across the global banking sector, industry research, and interviews with bankers, business leaders and policymakers, and identifying trends across client engagements, we consider how banks can 'rewire' themselves to integrate sustainability into not just some but all parts of its value chain — benefiting the planet, and shareholders and customers, while continuing to uphold necessary risk mitigation and prudent decision-making and realize returns on investments.

KPMG combined that focus with a deep dive on four essential areas of sustainable finance: agriculture, adaptation, infrastructure and retail housing. These domains have started to embrace transition — either by necessity or willful environmental protection — and are forging tangible paths to net zero.

Our report uses real-world examples to demonstrate just some of the leaps being made in sustainable finance, including:

- Investment platforms to provide financing to sustainable projects
- Sustainability-linked loans (SLLs) to encourage environmental and social improvements
- Green funds and other financing arrangements and products for low-emissions transportation, renewable energy projects and housing upgrades for carbon reduction

These innovative financial products go beyond the so-far common sustainability approach that de-emphasizes coal projects and emphasizes solar power, for example, and show leadership in sectors that have a much greater connection with a wide range of bank customers.

While most banks have some sustainability focus, they can do more — and do it more quickly.

Our report shines a light on:

- The sheer range of opportunities for banks to transition
- The growth potential of the banking industry
- How to expand market share
- The brand uplift potential by supporting sustainable products and services.
- How banks can become leaders in transition finance

By recognizing trends, understanding and identifying net-zero/profitable opportunities, and building important relationships with regulators and policymakers, banks can become first advantage movers and achieve real traction in the decarbonization journey.

Authors

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KPMG International

Richard leads the coordination of ESG consulting across our member firms for the Banking and Capital Markets practice. He regularly leads C-Suite engagements with banking accounts alongside prominent delivery leadership roles in our major ESG-related engagements with clients. Richard joined KPMG in the UK in 2015; prior to that Richard worked at the Royal Bank of Scotland Plc for 12 years where he led high-profile disposal projects and structuring engagements as part of the RBS Non-Core and Capital Resolution leadership team and before that the Global Banking & Markets Credit Structuring team. Richard's ESG experience over the last five years has covered strategy, sustainable finance, financed emissions, value creation, impact investing, options analysis, business at risk, regulatory compliance, greenwashing, transition plans, and operating model and governance structures.

Martine Botha
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Martine has worked across the not-for-profit, government and corporate sectors. She has experience working in various international markets including Australia, Indonesia, Hong Kong (SAR), China and South Africa. Martine is currently the Global Financial Services ESG Executive. Reporting to the Global Head of Financial Services, she has been responsible for the development and execution of KPMG's go-to-market strategy for ESG in Banking, Insurance, Private Equity and Asset Management. Martine has presented at various events on sustainability topics and delivers training to senior management at various financial services institutions. She has also contributed to several publications.

Monika Dangova
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Monika is a Sustainable Finance Specialist at KPMG in the UK with a demonstrable track record in developing and integrating green and transition investment strategies, taxonomies, and sustainable funds. Working with major financial institutions, as well as government bodies, she helps clients tackle questions such as "how to invest in sustainability credibly and commercially". Prior to specializing in sustainable finance, Monika also had strong experience in quantifying climate risks and developing climate transition plans, which focuses on business case development, carbon offset and financing strategies. Having worked across both corporate and the financial services sectors, Monika helps clients align on financing requirements and needs from the perspectives of financial providers and receivers.

How KPMG can help

Rewiring the bank for transition finance readiness

As decarbonization efforts accelerate across all sectors of the economy and the science clock continues to tick, the time for change is now.

KPMG's view is that while climate risk poses a new and material financial risk for the banks to quantify, analyze and mitigate, an equally sizeable risk exists around the commercial implications of failing to understand and capitalize on the economic transition to net zero.

The good news? Banking is well-placed to transform to meet the once-in-a-generation challenge — and opportunities — that decarbonization presents, when compared to other sectors. Leading banks already have many of the foundations needed to provide the financing required in a way that can help achieve a win-win-win for the planet, their customers, and their shareholders:

- Professional commercial decision-making
- Sound risk management and governance capabilities
- Advanced data and analytical capabilities, including the ability to quantify and price externalities into their propositions

The challenge will be how quickly banks can understand these new risks and new transition opportunities. With understanding, they can industrialize and scale sustainable lending to all the sectors they serve. Their traditional credit-based decisioning, based on decades of learned and quantified experience, will need to evolve to consider these new consideration sets — and in an environment where even the scientific fact base continues to evolve.

Banks play a crucial role as economic intermediaries, engaging with their customers and clients to promote sustainable practices and support customers to adapt to greener, more resilient business models, technologies and lifestyles.[87]

Working together

KPMG works closely with leading banks across the globe — and the corporates they serve — to devise and execute plans to enable the transition financing capabilities needed to support decarbonization.

With a global organization of specialists in climate change, decarbonization and net-zero transition, as well as deep experience in business operations, technology, green taxonomies, policy and industry sectors, we are positioned to bring together the experience and knowledge needed to embed sustainability into an organization's core business strategy and deliver on its transformation goals at speed.

The challenge will be how quickly banks can understand these new risks and new transition opportunities. With understanding, they can industrialize and scale sustainable lending to the sectors they serve.

[87] United Nations Environment Programme, "The UN Principles for Responsible Banking marks its five year anniversary" (2024).

KPMG supports clients with:

Access to global insights

Get access to leading practices, trends and potential roadblocks. We leverage the latest industry knowledge, alliance partnerships, and deep experience with organizations like yours around the world, to help you achieve your targets faster.

A systems-based approach

KPMG financial services specialists work closely with expert colleagues in key economic sectors, such as energy, agriculture, commercial real estate and industrial, to help banks understand how to best support their customers' decarbonization journeys and sector-specific challenges.

Climate change, sustainability and social impact experience

We help banks understand material risk exposures, how to measure, report and monitor these, and how to interpret the growing complexity of policy, regulatory and key stakeholder needs.

Market-leading sector-specific capabilities and pre-configured assets

Our capabilities and assets include customizable target operating model (TOM) frameworks, transformation blueprints investment taxonomies and prioritized roadmaps and risk frameworks (e.g. greenwashing risk management). These provide a clear path for banks to enhance the capabilities needed to identify and decision transition finance opportunities while monitoring, managing and reporting on underlying climate change financial risks.

Proprietary tools and modeling suites

Our tools help accelerate the development and deployment of new products and capabilities to meet the needs of multiple stakeholders, be they customers, investors or regulators.

Tools for transition

The Guide for Adaptation and Resilience Finance

KPMG, Standard Chartered and UNDRR launched adaptation and resilience financing roadmap to galvanize and align sector-wide efforts to address the significant finance shortfall in adaptation and resilience.

The Guide for Adaptation and Resilience Finance (The Guide), developed with support from more than twenty leading financial institutions, Multilateral Development Banks (MDBs) and NGOs — including the African Development Bank and the United Nations Environment Programme Finance Initiative — represents a practical tool for investors, commercial banks, and other financial institutions by:

- Setting out a common reference for adaptation and resilience alongside a list of financeable adaptation and resilience themes and activities, forming a classification framework
- Simplifying the decision-making process when financing adaptation and resilience through principles and guidance based on latest best practice definitions and frameworks
- Identifying priority investments and their co-benefits, including emissions reductions and nature protection and conservation, alongside adaptation and resilience benefits

The ultimate goal is for the guide to provide support to financial institutions to increase collaboration and scale up adaptation and resilience financing on a global basis. The Guide is also intended to be dynamic and will continue to evolve over time in response to market developments, particularly those influenced by UNDRR and the Climate Bonds Initiative.

"Emerging markets and developing economies have a disproportionate risk of exposure to the negative effects of rising temperatures and extreme weather, and in many cases have fewer resources or less capacity to respond. We need capital to move in the right direction and to mainstream natural and climate hazard resilience into financial flows. Commercial banks and private investors have an opportunity to lead in meeting the adaptation challenge. I encourage the banking and investment community to use this guide as a key resource when considering how and where to invest more proactively and ambitiously in a resilient future."

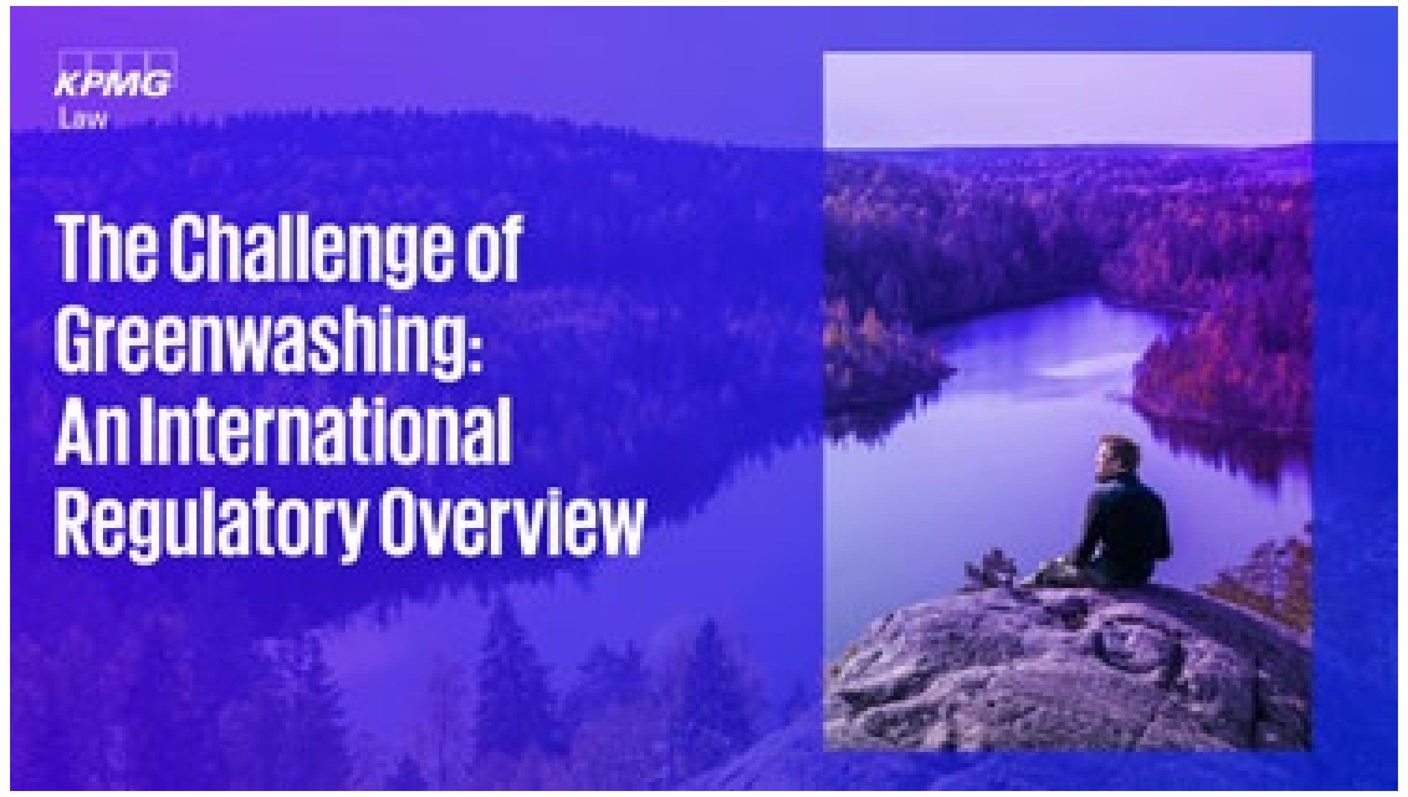
David Greenall
Global Managing Director, Climate Risk, Decarbonization Nature & Adaptation, KPMG International[88]

[88] Standard Chartered, "Guide for Adaption and Resilience Finance" (2024).

Related insights

Energy transition investment outlook: 2025 and beyond

As the global energy landscape evolves, financial investors and corporates are navigating the complexities of the energy transition. This transformation offers significant investment opportunities, driven by the need to enhance energy efficiency, expand renewable energy capacity, and modernize infrastructure. This report provides critical insights from 1,400 senior executives across 36 countries and territories, highlighting investment trends, risks, and the evolving strategies that are shaping this journey.



The challenge of Greenwashing

As corporations around the world adopt ESG commitments publicly, there is the increasing demand from consumers, investors, regulators and the public for transparency and sustainable practices. Throughout this report, we explore the risks that unsubstantiated and misleading sustainability information can trigger for both corporates and governments.

The move to mandatory reporting: Survey of Sustainability Reporting 2024

Mandatory sustainability reporting is nearly upon us. The *2024's KPMG Survey of Sustainability Reporting*, looks at global trends in sustainability reporting, offering insights for business leaders, company boards and sustainability professionals. This year, KPMG professionals reviewed sustainability reporting from 5,800 companies in 58 countries and jurisdictions, making this the most extensive survey in the series to date.

Accolades

KPMG recognized as a global market leader in Climate Change Consulting

KPMG named a Leader in Climate Change Consulting by Verdantix KPMG was **recognized as a global Leader in Climate Change Consulting** by Verdantix in their report entitled *Verdantix Green Quadrant: Climate Change Consulting 2023*. The report provides a detailed, fact-based benchmark of 15 of the most prominent climate change consulting providers in the market to identify those who "demonstrated the most comprehensive climate change consulting capabilities."[89]

KPMG named a Leader in ESG Program Management Services by the IDC MarketScape

KPMG has been **recognized as a worldwide Leader in ESG Program Management Services** in the IDC MarketScape: Worldwide ESG Program Management Services 2023–2024 Vendor Assessment. The report evaluates the vendor performance of 11 environmental, social, and governance (ESG) program management services providers worldwide.[90]

KPMG named a global Leader in ESG Environmental Services by ALM Intelligence

KPMG was **recognized as a global Leader in ESG** by ALM Intelligence in their report entitled *ALM Pacesetter: ESG: Environmental 2023–24* and received the top overall score of all firms profiled. The report explores how the most innovative professional services providers in 2023 are helping clients understand, develop, and properly manage environmental factors as part of their business strategy — as well as how innovative providers themselves are developing an environmental focused approach that is aligned to meet their own ESG organizational goals.[91]

[89] Verdantix Green Quadrant: Climate Change Consulting 2023.
[90] IDC MarketScape: IDC MarketScape: Worldwide ESG Program Management Services 2023-2024 Vendor Assessment.", December 2023, IDC #US50608423
[91] ALM Intelligence, ALM Pacesetter: ESG: Environmental 2023-24 report (c) 2023; used with license permissions

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