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Cambodia Microfinance Association



OXFAM

Designing Green Finance Instruments in the Microfinance Sector

Global Landscape and Case Studies (Phase 3)

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Executive Summary

This report provides a comprehensive analysis of the global green finance landscape, focusing on its applicability to Cambodia. It examines 4 key sectors - renewable energy, energy efficiency, electric vehicles, and agriculture - and explores various green finance instruments (GFIs) that can be leveraged to accelerate sustainable development in these areas.

The Market

The global green finance market has seen significant growth, valued at \$4.18 trillion in 2023 and expected to reach \$28.71 trillion by 2033. The ASEAN region accounts for 2% of global green debt financing with ASEAN's green finance market having issued approximately \$58.16 billion in green debt instruments from 2016 to 2023. This growth is driven by increased awareness of climate change and the urgent need for sustainable development. Countries worldwide have responded by introducing innovative financial instruments and elaborate policies. International forums such as COP29 and the G20 Summit have increased their scrutiny on green and climate finance.

The global Green, Social and Sustainability and Sustainability-Linked (GSS+) bond market stood at \$5.4 trillion in Q3 2024, of which green bonds accounted for over 60% of the volume. Cumulative green bond issuances reached \$3.3 trillion in Q3 2024, with China, the USA, and Europe being the biggest issuers of green bonds. Although the public sector has traditionally been the source for funding green and net-zero objectives, this booming space represents an emerging opportunity for both the private sector investment and project developers.

Risks and Challenges

However, challenges persist. A meaningful climate transition demands a massive financial commitment, with annual climate investment gap standing at \$2.7 trillion. Of this, annual investments \$2.4 trillion and \$400 billion are required for climate mitigation and adaptation respectively. This shortfall, representing 1.8% of global GDP, poses a significant challenge, particularly for developing and emerging economies that face heightened climate risks, underscoring the urgency of robust green finance instruments. Additionally, several risks hinder the mobilisation of further capital flows, particularly the high-risk perception of these segments.

Other key risks, especially seen in emerging and developing markets include time horizon mismatches, lack of project finance, high transaction costs, and difficulties in quantifying impact and translating this to financial metrics. Given these challenges faced by private investors and project developers for sustainability or green projects, various financial instruments and mechanisms have been developed and deployed to address these barriers and de-risk investments.

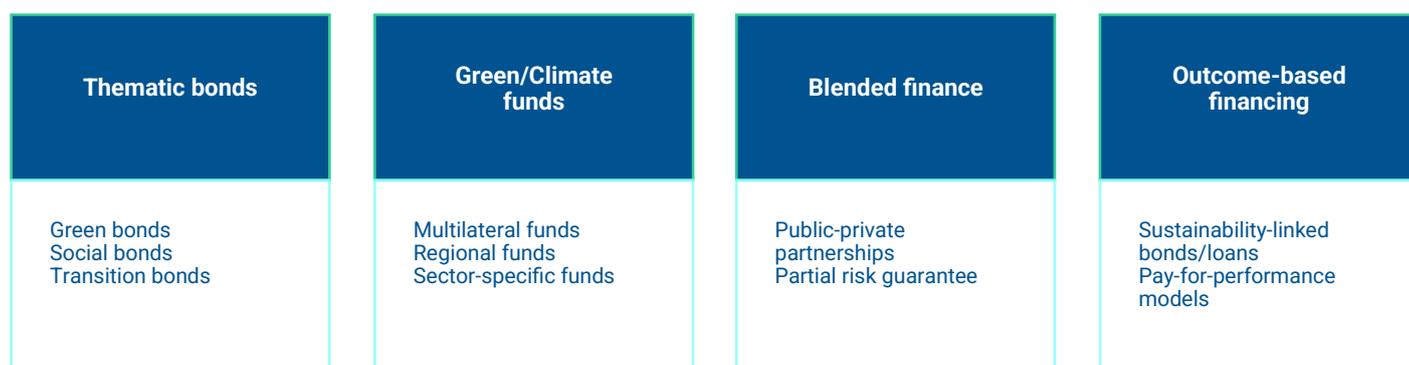
Methodology

For the purposes of international benchmarking, GFIs across four priority sectors, i.e. RE, EE, EV and agriculture, were identified. The scope includes debt and equity instruments, guarantees, and innovative mechanisms such as thematic bonds, sustainability-linked bonds and loans, and blended finance facilities across different comparable markets. The development and success of GFIs depend on a few critical parameters, which have been factored into the benchmarking exercise. These parameters ensure that the instruments are effective, transparent and aligned with sustainability goals. The parameters used for this benchmarking exercise are as follows regulatory alignment and support, innovation in product design, stakeholder involvement and commitments, technological innovations, alignment with local needs, customisation to sector-specific needs, vulnerable population inclusion and accessibility, inclusion of value chain parameters, market readiness, and transparency and reporting standards.

Drawing from these parameters, data collection involved a thorough literature review and secondary research to identify relevant GFIs in these markets. Sector-specific case studies that align with the parameters were selected for in-depth analysis to identify success factors and assess their adaptability to the Cambodian context.

Green Finance Instruments

The report identifies 4 main types of GFIs that have shown promise in various markets and could be adapted for Cambodia:



Thematic bonds

Fixed-income securities issued by governments, municipalities or companies, designed to channel investment into specific sectors or themes that address environmental, social or sustainability challenges

Allow targeting of specific SDGs, and benefit investors in balancing portfolio risk and ensure greater investor diversification for issuers by allowing access to new pools of funds, whilst gaining environmental and social credentials

Include green bonds, social bonds, sustainability bonds, blue bonds, yellow bonds, gender bonds, transition bonds etc.,

Applicability for Cambodia:

Growing investor appetite for green and solar bonds, supported by developments like GSS+ bond guidelines issued by the Securities and Exchange Regulator of Cambodia (SERC) and the Green Bond Issuance Handbook support. The Cambodia Sustainable Bond Accelerator Program can aid in expanding the development of the bond market, with the RE and EE sectors’ potential being recognised for green bonds.

<i>Case studies</i>			
Renewable energy	Energy efficiency	Electric vehicles	Agriculture:
AC Energy bond in Vietnam and Philippines for solar and wind projects	Indonesian’s Green Bond and Green Sukuk Initiative	Mufin Green Finance’s \$7 million green bond	100% Agricultural Green Bond in India

Green/climate funds

Green or climate funds are financial mechanisms established to support projects aimed at funding green, climate or sustainability interventions.

Typically created by international organisations, governments, or coalitions of countries, these funds mobilise resources from various sources, including public budgets, private sector investments, and international donations.

They leverage various financial instruments such as grants, concessional loans, equity investments, and guarantees to finance initiatives across multiple sectors. By providing targeted funding, risk-sharing and de-risking mechanisms, green/climate funds aim to facilitate the transition to low-carbon economies and enhance resilience against climate impacts in vulnerable communities.

Applicability for Cambodia:

Cambodia’s successful engagement with the GCF through the Cambodia Climate Financing Facility (CCFF) for supporting RE, EE, EV and agriculture holds precedence for the country to deepen its reach with other multilateral and sector-specific funds. The country’s supportive policy environment and targeted pilot projects provide a foundation for leveraging these funds.

<i>Case studies</i>			
Renewable energy	Energy efficiency	Electric vehicles	Agriculture:
Renewable Energy Asia Fund II	Thailand Energy Efficiency Revolving Fund	ADB Ventures Investment Fund	Agri-Business Capital Fund (ABC Fund)

Blended finance

Blended finance utilises public and philanthropic funding to draw in private sector investments for sustainability and climate initiatives.

This approach enables financial institutions with varying objectives to engage in sustainability projects by reducing associated risks and enhancing their appeal to private investors.

Risk reduction is accomplished through various mechanisms, including concessional capital, guarantees, risk insurance, technical support, and grants for project design, with concessional debt or equity being the most frequently employed tools.

Applicability for Cambodia:

Blended finance has emerged as a powerful tool for enabling green investments in Cambodia with examples in the solar power and forestry sectors. This instrument has been stated as a key solution to expedite the clean energy transition to address the issue of lack of funding and limited capacity.

Case studies			
Renewable energy	Energy efficiency	Electric vehicles	Agriculture:
Zimbabwe Gender-Responsive Clean Energy Facility	China Utility-Based Energy Efficiency Blended Finance Facility (CHUEE)	World Bank & SIDBI EVOLVE Blended Finance Facility	YES Bank & SEWA Rann of Kutch Blended Finance Facility

Outcome-based finance

Outcome-based financing (OBF) instruments are innovative financial instruments that link payments to the achievement of predefined environmental or social outcomes.

By transferring some performance risk to the implementing parties or investors, these tools provide risk sharing mechanisms aligning interests closely with desired outcomes. By creating potential financial returns for projects that might not otherwise generate them, OBF can attract private investment to conservation and sustainability efforts.

Applicability for Cambodia:

OBF instruments, although at early stages, shows promising potential with the Cambodia Sustainable Bond Accelerator aiming to accelerate the GSS+ bond market, including SLLs and SLBs. The key features of OBF instruments provide solutions to bridge the climate finance gap in the nation

Case studies			
Renewable energy	Energy efficiency	Electric vehicles	Agriculture:

Sembcorp's SGD 675 million SLB	Tata Capital's \$50 million SLB	Cleantech Corporation's SLL	Uzbekistan Indorama Agro's \$15 Million SLL
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Recommendations

After analysing sector-specific case studies and evaluating the success factors for various green finance instruments in sectors such as RE, EE, EV and agriculture, key considerations for each instrument were developed. These included key considerations to ensure the success of green finance instruments are ranged from policy/regulatory-level, financial sector-level to industry-level interventions. Key considerations included:

Thematic bonds

- Ensuring clean and ambitious targets to avoid greenwashing concerns
- Implementing robust monitoring, reporting and verification systems
- Developing standardised methodologies for measuring impacts
- Promoting certification to enhance investor confidence
- Establishing clear guidelines and standards

Green/climate funds and blended finance

Accessing capital from funds/facilities:

- Ensuring understanding of capital providers' priorities and any restrictions/criteria for sector-specificity and debt/equity-specificity
- Ensuring preparedness for compliance (ability towards deployment, structuring, sectoral or regional knowledge, and bearing any potential associated compliance costs)

Structuring funds/facilities:

- Effective and tailored risk mitigation that addresses specific market barriers or failures
- Effective deployment of catalytic capital to strategically enhance the risk-return profile of investments (enabling risk diversification through risk pooling or tranching to attract different private capital sources)
- Bringing in meaningful additionality: structure enables projects that would not otherwise attract private investment

Outcome-based financing

- Mitigating greenwashing concerns by avoiding ambiguous language and claims
- Ensuring adequate monitoring, reporting and verification systems, especially through third-party verification to confirm compliance
- Providing details on annual reports and fund allocation
- Implementing transparent revenue-sharing models and adhering to emerging standards to ensure transparent mechanisms

While challenges persist, the green finance market demonstrates remarkable resilience and potential. By addressing risks such as high transaction costs, project finance limitations, and

impact quantification, stakeholders can unlock transformative sustainable investments across renewable energy, energy efficiency, electric vehicles, and agriculture sectors.

The path forward demands collaborative efforts from governments, private sector entities, and international organisations to bridge the investment gap and accelerate the global transition to a low-carbon, climate-resilient future.

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A. Introduction

1.1 Global headwinds

The global green finance landscape has undergone a significant transformation in the recent years, particularly driven by increased awareness of climate change, biodiversity loss and resource depletion. As a result, the demand for financial mechanisms that support 'green' projects has surged.

'Green' financing, i.e., that is reserved for environmentally sustainable projects aligned with the aims of the Paris Agreement, as established in the ASEAN Taxonomy, has emerged as a critical component in the transition towards sustainable development and climate resilience. Global action to accelerate the mobilisation of green, with a specific focus on climate finance,¹ has intensified in the recent years, with annual climate finance more than doubling from \$674 billion in 2018 to \$1.46 trillion in 2022.²

Countries worldwide have responded by introducing innovative financial instruments and elaborate policies. International forums such as COP29 and the G20 Summit have increased their scrutiny on green and climate finance. Some key developments from this year include:

UN General Assembly 79th Session

World leaders adopted a Pact for the Future, an international agreement that aims to deliver on peace and security, sustainable development and human rights and gender, among others. This Pact aims to reform the global financial architecture to better serve developing countries. Key reforms include giving developing nations a greater voice in decision-making at financial institutions, enhancing financing from multilateral development banks, and reviewing sovereign debt frameworks to enable sustainable borrowing. Additionally, the agreement stresses the urgent need for climate action, advocating for increased investments in renewable energy and adaptation strategies.³

G20 Finance Ministers and Central Bank Governors Meeting

Finance sector leaders emphasised the need to mobilise more resources from multilateral development banks to support developing economies in their sustainable development. Additionally, the agreement committed to advancing capital adequacy frameworks to unlock significant lending potential for climate-related projects and emphasised the need for coordinated debt treatments for vulnerable countries.⁴

G20 Leaders' Summit

Leaders endorsed initiatives aimed at increasing green financing, including the establishment of frameworks that support investments in renewable energy and climate adaptation measures. Additionally, they called for enhanced collaboration among nations to implement

¹ Climate finance is treated as a subset of green finance in this report

² [CPI, 2024](#)

³ [United Nations, 2024](#)

⁴ [E3G, 2024](#)

effective climate policies and ensure that financial flows are directed towards environmentally sustainable projects.⁵

COP29

The final deal agreed sees a climate finance offering of \$300 billion annually from developed to developing countries to address climate impacts. A broader goal of raising \$1.3 trillion in climate finance annually by 2035 is also committed by rich nations, indicating the criticality of innovative financing instruments to meet this target.⁶

These developments signal the increasing attention world leaders are placing on enhancing global financial systems to scale funding for critical green, climate and sustainable projects. This growing emphasis has reflected in the rise of green financial instruments and other mechanisms to channel capital towards environmentally sustainable projects and initiatives.

1.2 Green finance market

The global green finance market was valued at \$4.18 trillion in 2023 and is expected to cross \$28.71 trillion by 2033.⁷ Of this, ASEAN accounts for 2% of global green debt financing with ASEAN's green finance market having issued approximately \$58.16 billion in green debt instruments from 2016 to 2023.⁸

This growth of the green finance market has gained traction with governments, investors, corporations and citizens, initiating their responses to the growing climate crisis, particularly focus on transitioning towards decarbonisation. Such a transition demands a massive financial commitment, with annual climate investment gap standing at \$2.7 trillion. Of this, annual investments \$2.4 trillion and \$400 billion are required for climate mitigation and adaptation respectively. This shortfall, representing 1.8% of global GDP, poses a significant challenge, particularly for developing and emerging economies that face heightened climate risks, underscoring the urgency of robust green finance instruments.⁹

To meet this widening green and climate finance gap, green finance instruments (GFIs) have become popular and aid in driving nations' net-zero and regulatory agenda worldwide. The global Green, Social and Sustainability and Sustainability-Linked (GSS+) bond market stood at \$5.4 trillion in Q3 2024, of which green bonds accounted for over 60% of the volume. Cumulative green bond issuances reached \$3.3 trillion in Q3 2024, with China, the USA, and Europe being the biggest issuers of green bonds.¹⁰

⁵ [E3G, 2024](#)

⁶ [Carbon Brief, 2024](#)

⁷ [Spherical Insights, 2024](#)

⁸ [Krungsri Research, 2024](#)

⁹ [Moody's, 2024](#)

¹⁰ [Climate Bonds Initiative, Q3 2024](#)

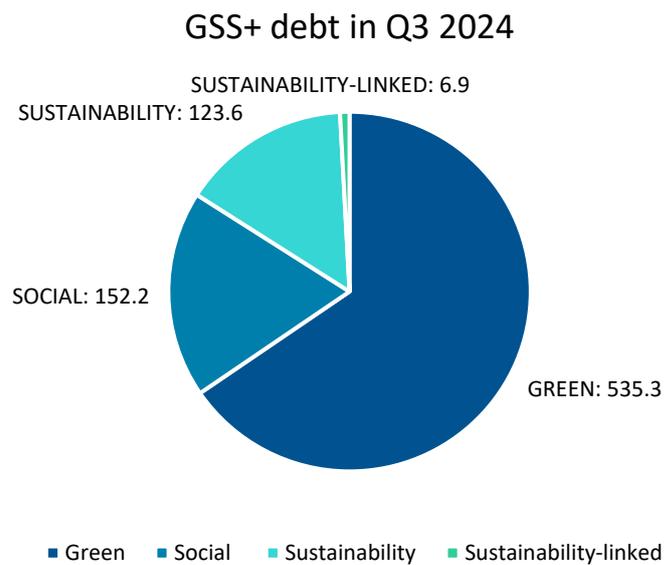


Figure 1: GSS+ debt in Q3 2024, Climate Bonds Initiative

Although the public sector has traditionally been the source for funding green and net-zero objectives, this booming space represents an emerging opportunity for both the private sector investment and project developers. However, risks and challenges pose significant hurdles in attracting private investments in these sectors.

1.3 Risks and challenges

Despite the growth in green finance and rising funding for sustainability and climate-related initiatives, several risks hinder the mobilisation of further capital flows, particularly the high-risk perception of these segments. Renewable energy and energy efficiency are still widely recognised, with more familiarity amongst investors and more established financing models. This is also the case for agriculture, especially within the microfinance space, as a number of financing routes already exist. However, despite this, there are various barriers that have limited investment in these sectors, especially in emerging markets and developing markets (EMDEs).

Key risks include:

- **Time horizon mismatch:** Misalignment between the long-term nature of investments in sectors such as renewable energy or agriculture and the short-term financial expectations of investors. This can deter funding as projects could require years to show returns, while investors seek quicker paybacks
- **Lack of project finance:** Many renewable energy initiatives struggle to secure adequate project financing due to perceived risks and uncertainties with respect to new technologies and market conditions, stalling the development and scaling of new technologies
- **Small size of projects & high transaction costs:** Small-scale projects often result in high transaction costs for investors, making them less attractive from a financial perspective. The costs associated with due diligence, monitoring, and evaluation can

be disproportionately high relative to the investment size, deterring potential funders. This is especially prevalent in the agriculture sector

- Lack of data and monitoring: Incomprehensive and insufficient monitoring and evaluation systems lead to investors lacking critical information to channel capital towards sustainability or green projects. This is especially prevalent in the agriculture sector, for projects that are often on a smaller scale
- Challenges in quantifying/translating impact into financial metrics: Quantifying and converting the full spectrum of impact and benefits of projects in sectors such as agriculture or nature complicate and limit investment

Given these challenges faced by private investors and project developers for sustainability or green projects, various financial instruments and mechanisms have been developed and deployed to address these barriers and de-risk investments.

1.4 Types of instruments

This section outlines a comprehensive array of instruments and mechanisms designed to de-risk investments, making climate-related sectors more attractive and financially viable for long-term funding. These include traditional mechanisms such as debt, equity, grants, and guarantees, as well as innovative financial instruments like GSS+ bonds, impact investment funds, and blended finance. These tools are specifically tailored to overcome the investment barriers faced by green and sustainable projects:

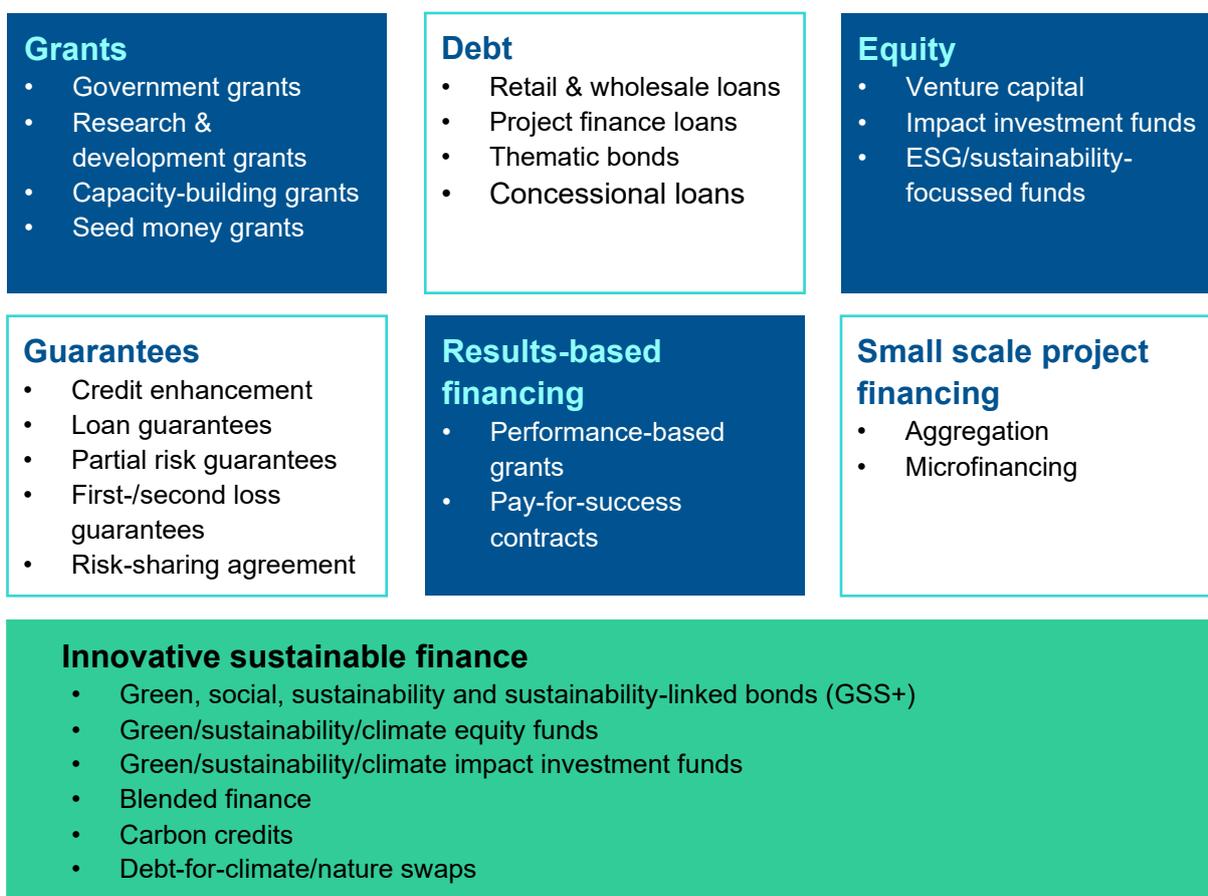


Figure 2: Types of Instruments

These instruments and mechanisms have been successfully directed towards green, sustainability and climate-related interventions, with several unique, replicable and scalable models mobilising capital flows.

Of these, GFIs specifically comprise of green bonds, green equity funds, green loans, green fixed deposits, sustainability bonds, blended finance structures focused on green objectives. Additionally, few emerging green products in the capital market include carbon credits, transition bonds and green securitisation, among others.

Instrument	Description
Green bonds	Fixed-income securities issued to raise capital specifically for projects with positive environmental impacts, such as renewable energy and energy efficiency. The proceeds are earmarked for green projects, ensuring transparency and accountability. ¹¹
Green equity funds	Investment funds that focus on companies and projects committed to environmentally sustainable practices. These funds invest in equities of firms that prioritise sustainability, aiming for both financial returns and positive environmental impact. ¹²
Green loans	Loans provided to finance projects that have a positive environmental impact. These loans often come with favourable terms to encourage investments in sustainable initiatives, such as energy-efficient buildings or renewable energy installations. ¹³
Green fixed deposits	Savings accounts or fixed deposit schemes offered by banks that provide higher interest rates for funds specifically allocated to green projects. The deposits are used to finance environmentally friendly initiatives. ¹⁴
Blended finance structures	Financial arrangements that combine public and private funding to support projects with green objectives. These structures leverage concessional finance to attract private investment into sustainable development initiatives. ¹⁵
Carbon credits	Tradable certificates representing the right to emit a certain amount of carbon dioxide or equivalent greenhouse gases. Purchasing carbon credits allows companies to offset their emissions by funding projects that reduce greenhouse gas emissions elsewhere. ¹⁶
Transition bonds	A type of bond designed to finance projects that help companies transition from high-carbon activities to more sustainable practices. These bonds support industries in their efforts to reduce emissions while still relying on fossil fuels during the transition. ¹⁷
Green securitisation	The process of pooling various types of green assets (like loans for energy-efficient buildings) and issuing securities backed by these assets. This allows for the creation of investment products focused on sustainable finance. ¹⁸

¹¹ [Iberdrola, 2024](#)

¹² [Carbon Collective, 2024](#)

¹³ [World Bank, 2021](#)

¹⁴ [ICICI Bank, 2023](#)

¹⁵ [Convergence, 2024](#)

¹⁶ [Singapore Carbon Markets Cooperation, 2024](#)

¹⁷ [Institute of Sustainable Finance, 2019](#)

¹⁸ [Climate Bonds Initiative, 2017](#)

Sectoral focus

Green financing is increasingly being directed towards key sectors such as renewable energy (RE), energy efficiency (EE), electric vehicles (EV) and agriculture, that are crucial for addressing climate change and promoting sustainability. RE has witnessed significant investments in offshore wind, onshore wind, and solar development projects across the globe. Investments in EE have been resilient with electrification of transport, mainly EVs, seeing notable gains.¹⁹ However, investment in other efficiency measures, for instance, in buildings, needs to be ramped up, with investments of \$1.9 trillion required till 2030, to double the rate of EE improvements.²⁰

The market for EVs has also seen momentum, with sales nearing \$14 billion in 2023, due to rigorous policy and regulatory support.²¹ Given that they are seen as the key technology to decarbonise road transport for a sector which accounts for 15% of global energy-related emissions, recent years have seen improved range, wider model availability and increased performance. 2022 and 2023 alone saw over \$275 billion in investment announcements for EVs and batteries.²² On the other hand, despite a push towards mobilising adaptation finance, investments in agrifood systems accounted for only 4.3% of total global climate finance, estimated at \$28.5 billion in 2019/2020 and need to be scaled by 40 times to achieve the climate transition to \$1.1 trillion till 2030.²³ This substantial gap can be attributed to traditional financing models failing to take on the small size and long-term horizons that are needed to transition agrifood systems.²⁴

As a result, green financing flows need to be accelerated for all relevant sectors to achieve an overall transition to a clean and green economy.

1.5 Methodology

Given the context of the market for green financial instruments (GFIs) and their requirements, this chapter aims to develop a GFI template with recommendations on the instrument's key parameters and necessary considerations. This international benchmarking assessment explores the different GFIs employed across four focus sectors in different geographies. By analysing the international best practices and conditions required for deploying GFIs, the study proposes recommendations tailored to the Cambodian market for accelerating the green finance space in the country.

For the purposes of international benchmarking, GFIs across four priority sectors, i.e. RE, EE, EV and agriculture, will be identified. The scope includes debt and equity instruments, guarantees, and innovative mechanisms such as thematic bonds, sustainability-linked bonds and loans, and blended finance facilities across different comparable markets. These

¹⁹ [Macquarie, 2024](#)

²⁰ [International Energy Agency, 2024](#)

²¹ [International Energy Agency, 2024](#)

²² [International Energy Agency, 2024](#)

²³ [Climate Policy Initiative, 2024](#)

²⁴ [Climate Policy Initiative, 2024](#)

comparable markets include peer countries (Zimbabwe and Uzbekistan, among others) which share similar characteristics with Cambodia in terms of size, economic profile and green finance development, and model countries (Indonesia, Thailand, Vietnam, Japan and India, among others), which are larger than Cambodia and more advanced across these parameters. The benchmarking exercise has referred to a mix of these groups while studying GFIs.

The development and success of GFIs depend on a few critical parameters, which have been factored into the benchmarking exercise. These parameters ensure that the instruments are effective, transparent and aligned with sustainability goals. The parameters used for this benchmarking exercise are as follows:

Parameters	Significance	Contribution to GFI's success	Example
Regulatory alignment and support	Robust regulatory frameworks and adequate policy support provide the necessary legal backing and stability for green finance instruments	Such frameworks ensure compliance, standardisation, and investor confidence, while reducing risks and aligning market practices	ASEAN Green Bond Standards (2017), ²⁵ Singapore Green Bond Framework (2022) ²⁶
Innovation in product design	Innovative product designs diversify risks and make green finance instruments more attractive to investors	Innovative product structures expand the range of green financing options and improves market efficiency	Sustainability linked bonds, sustainability linked loans, blended finance structuring ²⁷
Stakeholder involvement and commitments	Engaging diverse stakeholders such as governments, financial institutions, businesses, and communities, ensures that instruments meet multiple needs and have broad support	Such an involvement improves adoption, alignment with climate targets and goals, and long-term viability of instruments	The Green Climate Fund involves multiple stakeholders in financing climate projects globally, ensuring broad-based support and accountability ²⁸
Technological innovations	Technology can enhance the efficiency and impact of green finance instruments by improving data collection, monitoring and reporting	Enhanced technologies reduce costs, improves data quality and enables new financing models	Blockchain technology is being explored to improve transparency in carbon credit trading by providing immutable records of transactions ²⁹
Alignment with local needs	Tailoring green finance instruments to local contexts ensures they address specific environmental challenges and socio-economic conditions	Streamlining alignment with local needs ensures relevance, addresses priority issues and improves impact	In Kenya, integrating mobile money platforms like M-Pesa with traditional banking has increased SME lending by using alternative data sources for credit assessments. ³⁰

²⁵ [ASEAN, 2018](#)

²⁶ [Ministry of Finance Singapore, 2022](#)

²⁷ Explained in upcoming sections

²⁸ [Green Climate Fund, 2024](#)

²⁹ [TraceX Technologies, 2023](#)

³⁰ [World Bank, 2022](#)

Customisation to sector-specific needs	Customising GFIs to address these specific needs ensures that the financial products are relevant, effective, and attractive to potential users within each sector	Such a tailored approach allows for precise targeting, leading to increased adoption by investors, enhanced impact, improved risk assessment and better regulatory alignment	Sustainable Rice Platform in Thailand is a rice-specific sustainability standard and financing mechanism having tailored metrics and performance indicators leading to customised financing and targeted impact ³¹
Vulnerable population inclusion and accessibility	Including vulnerable groups ensures equitable access to green finance and address social sustainability	Having a gender focus, for instance, ensuring that women have access to green financing can empower the target section economically and socially. ³² Including low-income population and youth can drive inclusive growth and innovation. These can also help meet national commitments and policy targets	Inclusive green finance initiatives provide support to low-income households, small businesses and vulnerable groups, in the face of climate shocks ³³
Inclusion of value chain parameters	Considering the entire value chain in financing decisions ensures comprehensive environmental benefits. ³⁴	This inclusion addresses indirect environmental impacts and promotes systemic change	The Green investment Fund implemented in China addresses indirect environmental impacts throughout the agricultural value chain by having a holistic ecosystem approach ³⁵
Market readiness	Market readiness indicates the degree of compatibility with existing market structures and investor preferences for the development of GFIs	Market readiness facilitates adoption and integration into mainstream finance, while also signalling requirements and shortcomings of GFIs	The ASEAN Green Financial Instruments Guide provides a step-by-step guide to green financing in the ASEAN region, creating an enabling environment for GFIs. ³⁶
Transparency and reporting standards	Clear reporting standards are crucial for maintaining investor trust and ensuring that funds are used as intended ³⁷	Adherence to disclosure requirements reduces greenwashing risks and improves market efficiency	The International Sustainability Standards Board (ISSB) provides a common language for climate disclosures ³⁸

³¹ [German Cooperation, 2023](#)

³² [World Bank, 2024](#)

³³ [UNSGSA, 2023](#)

³⁴ [PWC, 2021](#)

³⁵ [ADB, 2022](#)

³⁶ [Climate Bonds Initiative, 2019](#)

³⁷ [ICEX, 2020](#)

³⁸ [IFRS, 2023](#)

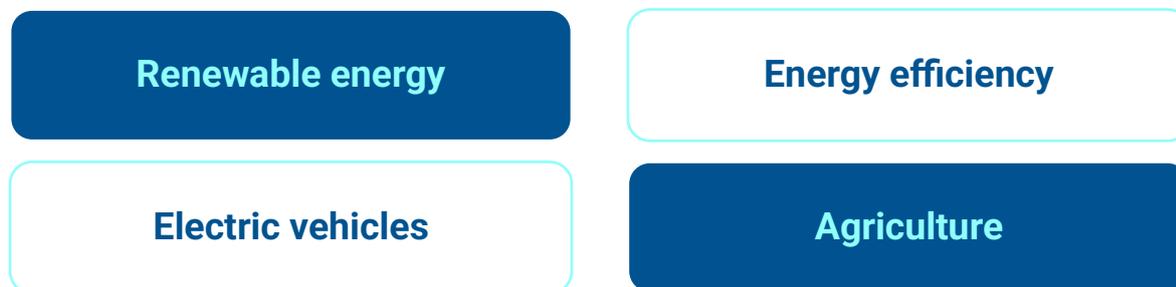
Table 2: List of success parameters for GFIs (author's research)

Drawing from these parameters, data collection involved a thorough literature review and secondary research to identify relevant GFIs in these markets. Sector-specific case studies that align with the parameters were selected for in-depth analysis to identify success factors and assess their adaptability to the Cambodian context.

Section 2 examines each of the sectors in focus in detail, including an overview of market conditions, and the investment risks faced by each sector. Section 3 delves into the different GFIs chosen for the purpose of this benchmarking exercise, defining them and providing case studies of these successful GFIs in the geographies mentioned above. Section 4 consolidates these findings, providing instrument-wise cross-cutting recommendations to scale GFIs and actionable insights for Cambodia., ensuring alignment with local market dynamics and opportunities.

B. State of the sectors

The sectors in focus of our chapter include RE, EE, EVs and agriculture.



These sectors have been selected based on increased investments directed and their identified potential in the Cambodian market, as defined from the landscape assessment.

2.1 Renewable energy

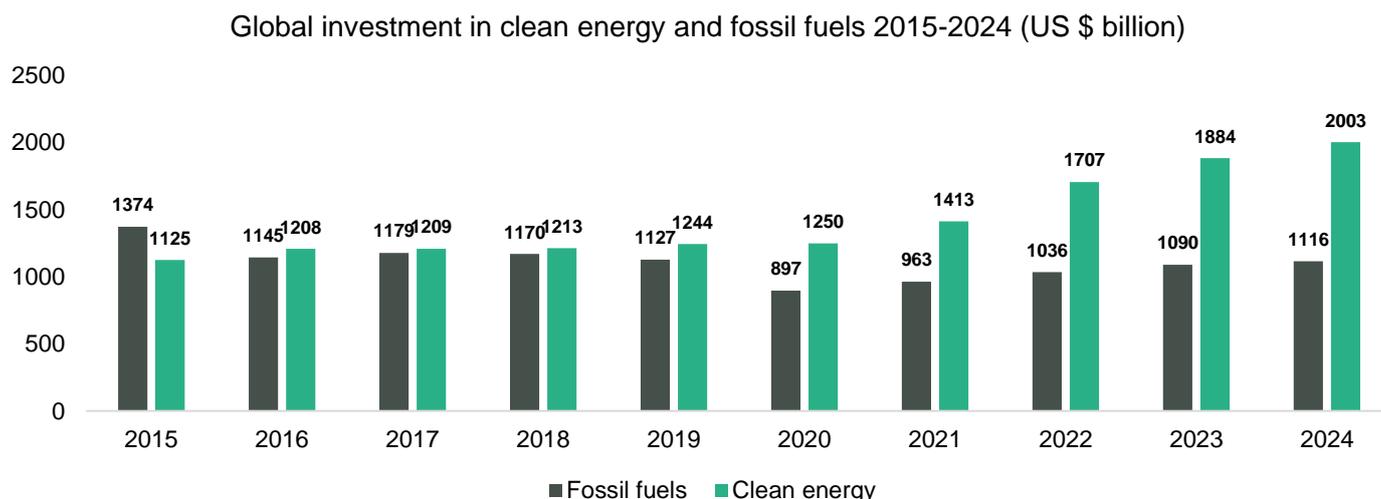


Figure 3: Global investment in clean energy and fossil fuels 2015-2024 (US \$ billion)

Investments in clean energy and RE (solar, wind, geothermal, tidal) have seen an upward trajectory and is set to exceed \$3 trillion in 2024.³⁹ Of these investments, clean energy technologies and infrastructure investments make up \$2 trillion.⁴⁰ Since 2020, spending on renewable power, grids and storage has exceeded the total spending on oil, gas and coal. This transition has also been possible because of the decreasing prices for minerals, and metals, which reduce the overall cost of shifting towards cleaner sources of energy. The last 2 years have seen a 30% reduction in solar panel costs. In the Asian continent, investments in RE have grown exponentially since 2004 at an average annual growth rate of 23%, largely driven by

³⁹ [IEA, 2024](#)

⁴⁰ Clean energy investment figure is a composite of investments in renewable power, grids and storage, energy efficiency and end-use, nuclear and other clean power and low emissions fuels.

China which accounts for 80% of the share. The growing share of RE investments reflect the shift in global and national priorities in the region, with new policy initiatives, well-managed public tenders and improved grid infrastructure.⁴¹

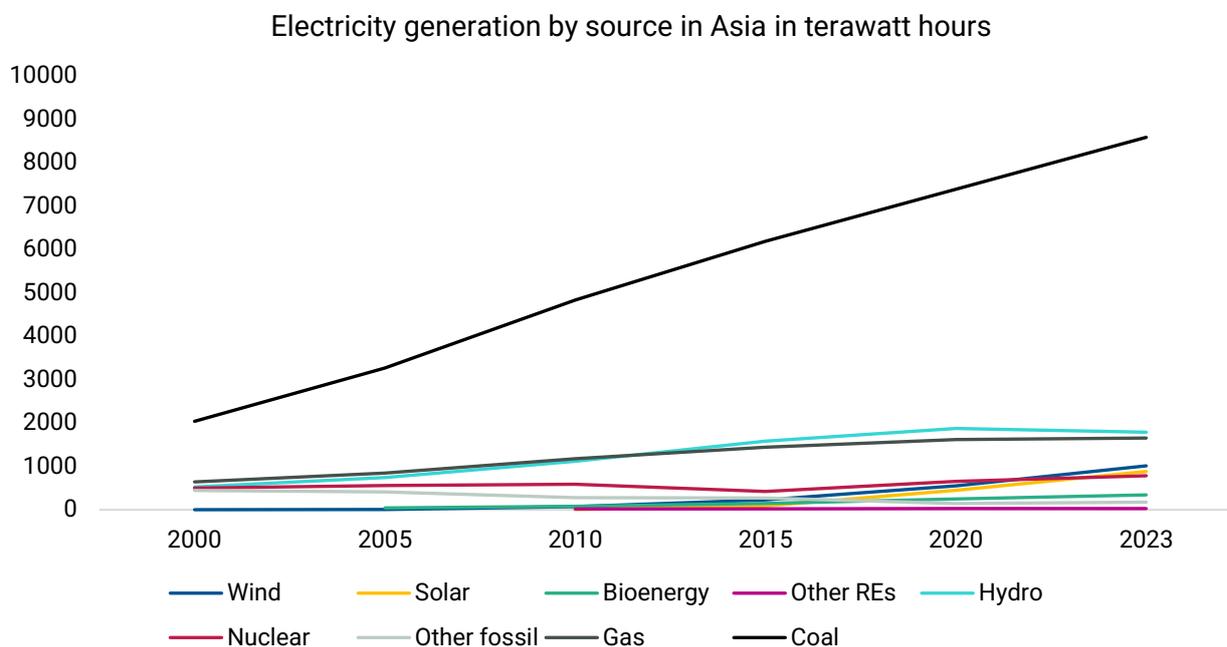


Figure 4: Electricity generation by source in Asia in terawatt hours⁴²

Traditionally, South and Southeast Asian economies have majorly relied on domestic public funding for infrastructure investments. The region’s financial systems have been dominated by banks which have been risk averse, given the short-term nature of banking finance, making it unsuitable for long-term energy projects. The region also struggles with high levels of debt relative to tax revenue, narrowing fiscal space. Furthermore, ambiguity in policies, in addition to red tapism in procedures and documentation, cause barriers in accessing government support by RE developers. Multilateral and bilateral funding are crucial sources of foreign capital for RE projects in Asia. However, this increased reliance has exacerbated external debt, leading to an underdeveloped domestic financial market.⁴³ These challenges have fuelled the market for GFIs such as green bonds, transition bonds, and blended finance structures to accelerate RE investments.

2.2 Energy efficiency

⁴¹ [IEA, 2024](#)

⁴² [Ember, 2023](#)

⁴³ [IEEFA, 2024](#)

EE investments comprise the competitive costs of buying new energy-efficient equipment or refurbishing existing equipment to reduce energy use. Of these numbers, investment in EE and end use represents 33% of total clean energy investments in 2024.⁴⁴

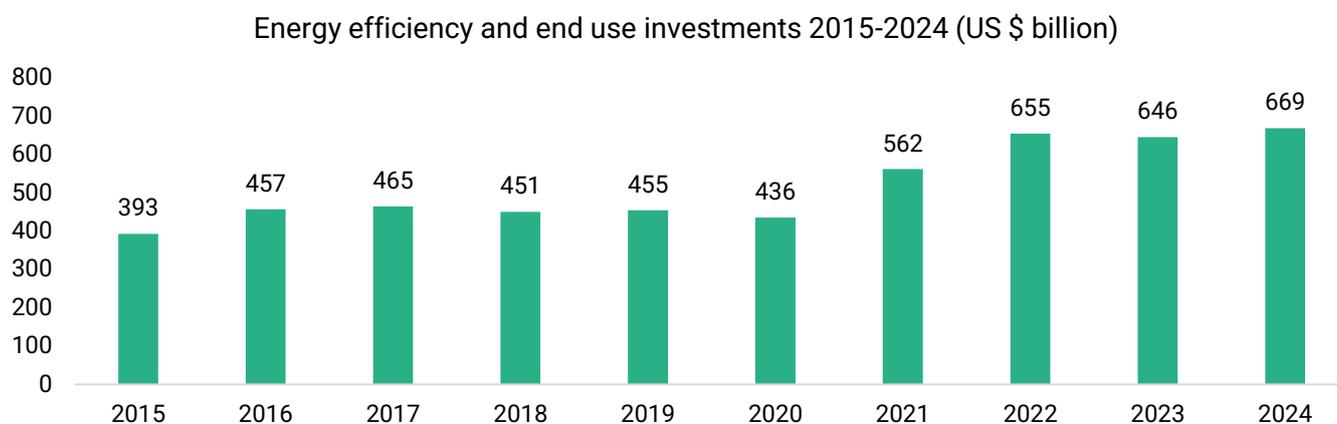


Figure 5: Global investment in energy efficiency 2015-2024 (US \$ billion)

2023 saw a dip in EE investments, as compared to 2022 which saw a 16% spike in EE investments in buildings, transport and industry driven by the global energy crisis.^{45,46} Rising energy costs heightened investor interests in long-term energy choices, aimed at balancing energy reliability and affordability. However, stalling EE investments threaten the emission targets since the investment trend, although positive, is insufficient. Tripling of EE investments is required between 2023 and 2030 to meet net-zero emission targets.

Research indicates that directing 1%-4% of energy sector investments toward EE could address up to 25% of the anticipated growth in primary energy demand in developing Asia by 2030.⁴⁷ Despite the sector's cost effectiveness, there are economic, financial and behavioural barriers to greater EE investments. Financial barriers include the high upfront costs of energy-efficient technologies and limited access to financing options, particularly in developing economies. Economic obstacles stem from the relatively long payback periods of EE investments, which can deter stakeholders focused on short-term returns. Behavioural barriers are rooted in a lack of awareness and technical knowledge about the benefits of EE, coupled with entrenched habits and resistance to adopting new technologies. Addressing these challenges requires targeted policy interventions, capacity building, and innovative financing mechanisms to unlock the potential of EE investments.^{48,49}

2.3 Electric vehicles

⁴⁴ [IEA, 2024](#)

⁴⁵ [IEA, 2024](#)

⁴⁶ Clean energy investment figure is a composite of investments in renewable power, grids and storage, energy efficiency and end-use, nuclear and other clean power and low emissions fuels.

⁴⁷ [ADB, 2023](#)

⁴⁸ [SEADS, 2023](#)

⁴⁹ [ADB, 2013](#)

The global transport sector accounted for approximately 16% of global greenhouse gas (GHG) emissions in 2023, having risen 80% since 1990.⁵⁰ The IPCC's Sixth Assessment Report highlights that road transport for both passengers and freight makes up the largest source of transport emissions globally.⁵¹

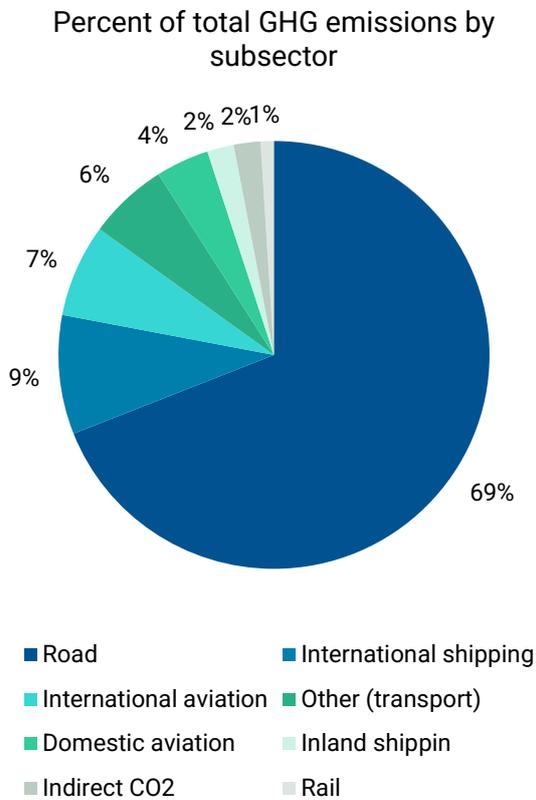


Figure 6: Percentage of transport GHG emissions by subsector (2019)

The IEA's Tracking Clean Energy Progress 2023 highlights that the transport sector is 'not on track', indicating that the sector is moving in the wrong direction or progress made is significantly insufficient to meet the Net Zero by 2050 trajectory.⁵² In contrast, the EV sector is tagged as 'on track' with increased sales, supportive policy and regulatory environment, stronger performance and price reductions.⁵³

For example, electric car sales approached 14 million units in 2023, with 95% of these sales occurring in China, Europe, and the United States. This global total of nearly 14 million new electric vehicles registered brought the overall number on the roads to 40 million. EVs accounted for approximately 18% of all cars sold in 2023, rising from 14% in the previous year. These trends indicate a strong and ongoing growth trajectory as electric vehicle markets continue to mature.

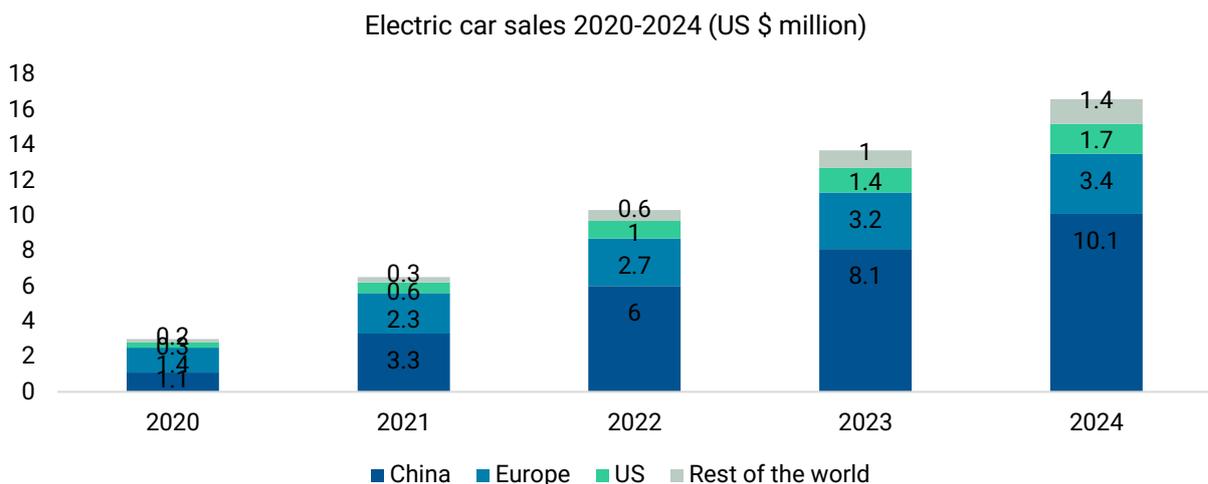


Figure 7: Electric car sales 2020-2024 (US \$ million)

⁵⁰ [Statista, 2024](#)

⁵¹ [IPCC, 2024](#)

⁵² [IEA, 2024](#)

⁵³ [IEA, 2024](#)

The expansion of EV charging infrastructure is also significant, with most 3.23 million publicly installed chargers for light-duty vehicles in 2023. Heavy-duty vehicle charging stations are also under development, but still in nascent stages of large-scale deployment.⁵⁴ On the other hand, rise in EV sales is also driving increased demand for batteries in 2023, which experienced about 40% increase from 2022. The United States and Europe recorded the highest growth rates among major EV markets, each surpassing 40% year-on-year, with China closely following at approximately 35%.⁵⁵

Despite this growth, several challenges still limit EV adoption. Range anxiety is a significant concern, with potential buyers fearing running out of battery power before reaching a charging station, particularly in regions with limited infrastructure, such as rural areas. Additionally, insufficient charging infrastructure remains a critical issue, despite growth in publicly installed charging stations. The high initial costs of EVs compared to internal combustion engine vehicles deter many consumers, despite government incentives aimed at narrowing this gap. Further, inadequate service and repair facilities present a hurdle for owners to manage maintenance, as seen in many Southeast Asian countries where trained technicians are scarce.^{56,57,58}

2.4 Agriculture

The agriculture sector is both vulnerable to climate change and a significant contributor to it, responsible for about 12.16% of global greenhouse gas emissions in 2023.⁵⁹ Beyond carbon dioxide emissions, the sector is also the largest source of anthropogenic methane emissions. Approximately 50% of agricultural emissions come from farm activities, particularly livestock, which emit around 4 billion metric tons of CO₂ equivalent annually. While Asia, especially China and India, leads in agricultural emissions, Brazil ranks as the largest emitter when land use changes are considered, largely due to deforestation in the Amazon for soybean farming and cattle grazing.⁶⁰

Small-scale producers and agribusinesses play crucial roles in food production and local economies, yet they remain significantly underserved. Approximately 5 out of 6 farms globally, are small-scale, utilising just 12% of total agricultural land while generating 35% of the global food supply. Further, in low- and middle-income countries, small-scale production accounts for 40 to 50% of the food supply.⁶¹ Given its criticality within the global economy, there is an urgent need to reduce emissions within this sector.

However, sustainable/climate finance flows to agriculture have remained meagre. Climate finance flows to small-scale agrifood systems for example, amounted only to \$5.53 billion in 2019/2020, representing only 0.8% of total climate finance. Additionally, this figure amounts

⁵⁴ [IEA, 2024](#)

⁵⁵ [IEA, 2024](#)

⁵⁶ [McKinsey, 2022](#)

⁵⁷ [Market Research Southeast Asia, 2024](#)

⁵⁸ [Qadir, S et al., 2024](#)

⁵⁹ [Climate Watch Data, 2023](#)

⁶⁰ [Statista, 2024](#)

⁶¹ [Climate Policy Initiative, 2023](#)

to just 19% of total agrifood system climate finance.⁶² The World Bank writes that while agrifood systems need \$260 billion annually, only 4.3% of total climate finance went to the agriculture, forestry and land use (AFOLU) sector.⁶³

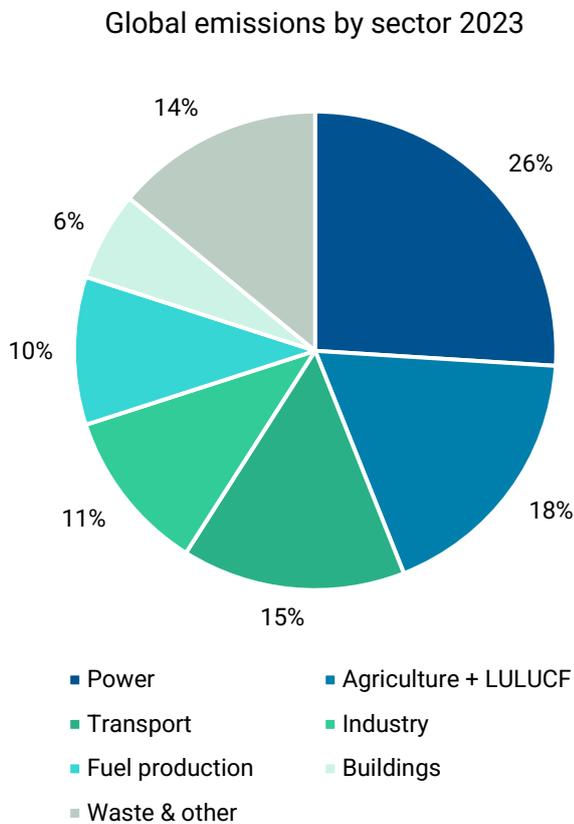


Figure 9: Global emissions by sector 2023

Climate finance flows to small-scale agrifood systems

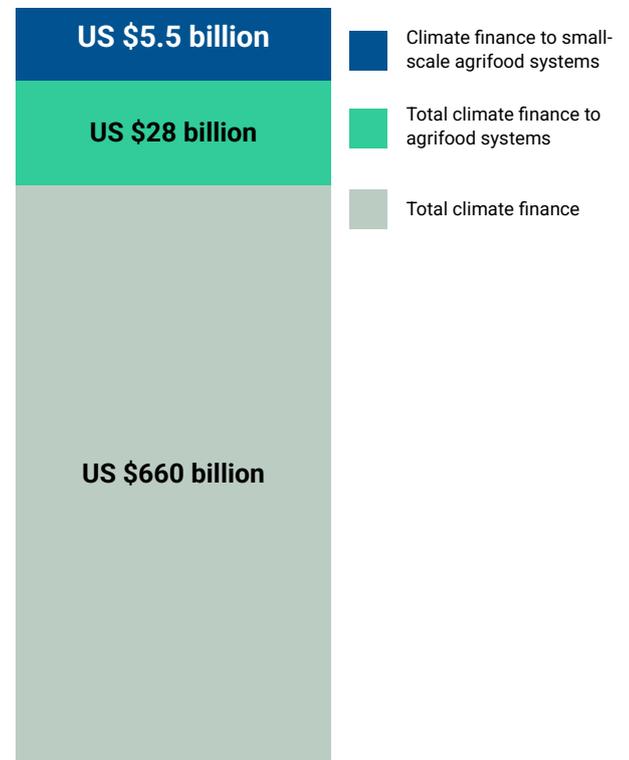


Figure 8: Climate finance flows to small-scale agrifood systems

Challenges to financing the agricultural sector include small project sizes and the resultant high transaction costs. For example, women farmers in India typically operate on smaller land holdings, with an average size of 0.93 hectares,⁶⁴ and financing sustainable farming or climate-smart agriculture in these farms prove to be challenging. These small-scale projects often result in high transaction costs for financiers, making them less attractive for investment. The costs associated with due diligence, monitoring, and evaluation can be disproportionately high relative to the investment size, deterring potential funders. This is also the case for rural MSMEs with limited capacities, where financial institutions incur higher transaction costs, leading to above-average administrative expenses associated with small loans.⁶⁵ Further, the quantification of the full range of benefits availed from sustainable farming, climate-smart agriculture or nature-based solutions is not always meaningfully translated into financial metrics. This results in essential data losses that hinder investments.

⁶² [Climate Policy Initiative, 2023](#)

⁶³ [World Bank, 2024](#)

⁶⁴ [Ministry of Agriculture and Farmers Welfare, 2020](#)

⁶⁵ [World Bank, 2017](#)

C. Green finance instruments

This section explores four distinct GFIs and green mechanisms, that have risen in prominence in recent years, given their innovative structures and robust risk mitigation features. The section will delve into their workings, highlighting international best practices tailored to each of the sectors discussed above.

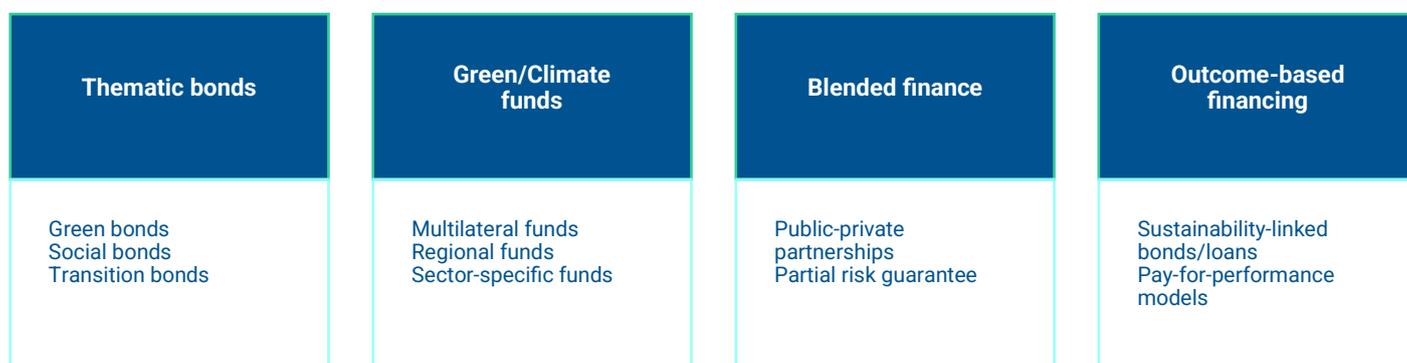


Figure 10: Focus GFIs

3.1 Thematic bonds

Thematic bonds refer to innovative financial instruments issued by governments, municipalities or companies, designed to channel investment into specific sectors or themes that address environmental, social or sustainability challenges. These fixed-income securities target specific SDGs, and benefit investors in balancing portfolio risk and ensure greater investor diversification for issuers by allowing access to new pools of funds, whilst gaining environmental and social credentials, thereby benefiting EMDEs like Cambodia.

Thematic bonds can be generally divided into 2 categories i.e. use of proceeds (UoP) bonds and key performance indicator (KPIs) bonds, based on the way in which the funds are utilised and allocated. Up bonds are financial instruments allocated for specific projects aimed at achieving targeted impacts. In contrast, KPI bonds focus on broader sustainability and environmental, social, and governance (ESG) objectives, without being tied to a particular project or deliverable like UoP bonds. For KPI bonds, issuers typically face higher coupon rates if they fail to meet the defined performance indicators.

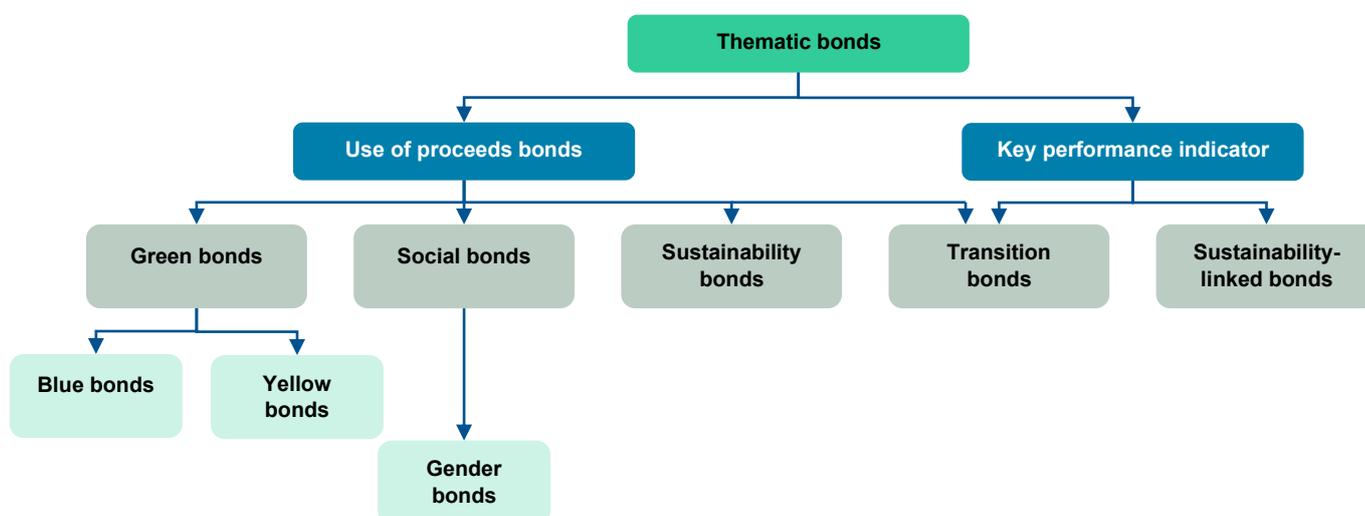


Figure 11: Classification of thematic bonds

Thematic bonds⁶⁶ can further be differentiated into sovereign and non-sovereign bonds based on their issuance. Sovereign bonds are issued by national governments and are a part the country's sovereign debt, whereas non-sovereign thematic bonds are issued by entities other than national governments, such as local governments, quasi-governmental organisations, supranational agencies and corporations. Since sovereign bonds have a government backing, they typically have lower credit risks and higher credit ratings, in comparison to non-sovereign bonds. Sovereign thematic bonds represent a growing but still a small fraction of overall sovereign debt issuances, with a cumulative volume of US \$630.5 billion¹⁰. The figure below represents the various kinds of thematic bonds.

Thematic bonds	Definition
Green bonds	A fixed income debt instrument specifically issued to finance projects with clear environmental benefits such as RE, EE, sustainable forestry, pollution prevention. These also include projects with climate change mitigation, adaptation and nature and biodiversity conservation objectives.
Blue bonds	A sub-category of green bonds, this bond is designed to support marine and ocean-based projects, such as sustainable fisheries, marine ecosystem protection and pollution reduction in oceans and coastal areas.
Yellow bonds	Another sub-category of green bonds, this bond is typically associated with financing solar energy projects, focusing on RE solutions that harness solar power transitioning to clean energy.
Innovative bonds	Thematic finance has evolved to tackle unique environmental and social challenges by linking investment returns to measurable outcomes in sustainability and conservation <ol style="list-style-type: none"> 1. IFC's Kangaroo Bond⁶⁷ aimed at bridging the biodiversity finance gap in emerging markets 2. World Bank's Rhino Bond⁶⁸, the first of a wildlife conservation bond, is a results-based financing instrument, aimed at protecting black rhino population in Africa 3. IFC's Forest Bond⁶⁹ aimed at unlocking private finance to support reducing emissions from deforestation and forest degradation
Social bonds	A debt instrument aimed at funding projects with positive social outcomes such as affordable housing, access to essential services (education and healthcare), job creation or support for vulnerable populations, tackling societal inequalities.
Gender bonds	A sub-category of social bond that targets gender-related outcomes aimed at improving gender equality.
Sustainability bonds	This debt instrument combines the features of green and social bonds, and finances projects with both environmental and social benefits such as RE with community benefits or sustainable urban development projects.

⁶⁶ [CEEW, 2024](#)

⁶⁷ [IFC, 2024](#)

⁶⁸ [World Bank, 2022](#)

⁶⁹ [CBD, 2017](#)

Transition bonds	This bond is issued by entities in high-carbon sectors to fund activities that facilitate the shift toward lower-carbon operations such as upgrading to cleaner technologies or transitioning to RE sources.
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Figure 12: Explanation for thematic bonds⁷⁰

Thematic bonds have been the most popular instrument in furthering green objectives, with their cumulative volume totalling \$5.4 trillion by Q3 2024⁷¹. With internationally accepted and validated guidelines for such bonds existing such as the ICMA (International Capital Markets Association) Green Bond Principles⁷², Social Bond Principles⁷³, Sustainability Bond Guidelines⁷⁴ and Sustainability-linked Bond Principles⁷⁵, Climate Bond Initiative’s (CBI) Climate Bond Standards⁷⁶, and regional standards like ASEAN Bond Standards⁷⁷, etc, the market confidence in these instruments have surged with adequate structures, reporting requirements and verifications, improving transparency and accountability. As a result, thematic bonds have gained credibility and attracted a wider range of issuers and investors across a variety of sectors.

Thematic bond	Target sectors	Issuer	Size	Objective	Impact/Performance
Egypt’s Sovereign Green Bond 2020⁷⁸	<ol style="list-style-type: none"> Clean transportation Renewable energy Energy efficiency Pollution control and water management 	Government of Egypt	\$750 million	The bond aims to finance and refinance green projects under Egypt’s Sustainable Development Strategy: Egypt Vision 2030	<ol style="list-style-type: none"> Egypt’s first sovereign green bond in the MENA region with strong investor confidence Increased solar and wind projects contributing to 20% of RE in energy mix Investment in the Cairo Metro system expansion to reduce urban air pollution Strengthened desalination and wastewater management
City of Johannesburg Green Bond 2014⁷⁹	<ol style="list-style-type: none"> Green buildings Energy efficiency 	City of Johannesburg (Municipal entity)	\$110 million	The City of Johannesburg issued this green municipal bond to finance projects aimed at enhancing urban sustainability	<ol style="list-style-type: none"> First municipal green bond in South Africa, setting an example for other cities in South Africa Financed initiatives such as Biogas to Energy Project and the Solar Geyser Created a funding source to improve its climate change mitigation strategy

⁷⁰ [CEEW, 2024](#)

⁷¹ [CBI, 2024](#)

⁷² [ICMA, 2021](#)

⁷³ [ICMA, 2023](#)

⁷⁴ [ICMA, 2021](#)

⁷⁵ [ICMA, 2023](#)

⁷⁶ [CBI, 2023](#)

⁷⁷ [ASEAN, 2024](#)

⁷⁸ [World Bank, 2022](#)

⁷⁹ [Joburg, 2014](#)

Seychelles Sovereign Blue Bond 2018⁸⁰	1. Marine conservation 2. Sustainable Fisheries 3. Climate adaptation	Government of Seychelles	\$15 million	To mobilise capital for ocean sustainability, particularly in the context of an emerging economy highly dependent on marine resources	1. World's first sovereign blue bond 2. Helped fund the creation of two Marine Protected Areas (MPAs) 3. Supported local fisheries in adopted sustainable fishing practices 4. Contributions from the World Bank and the Global Environment Facility helped lower the cost of capital
Indonesia's Women's Livelihood Bond⁸¹	1. Gender equality 2. Gender empowerment	Impact Investment Exchange	\$27.7 million	To support 180,000 underserved women and women entrepreneurs in the Asia Pacific region	1. Enabled women to establish and expand businesses in agriculture and RE, increasing household incomes 2. Strengthened access to credit, enabling financial inclusion 3. Enhanced community and climate resilience
Wildlife Conservation Bond/Rhino Bond 2022⁸²	1. Wildlife and biodiversity conservation	World Bank	\$150 million	To support South Africa's efforts to conserve endangered species	1. First-of-its-kind outcome-based financial instrument measured by an increase in black rhino population 2. Strengthened anti-poaching measures and improved habitat management 3. Created jobs and improved livelihoods fostering local engagement

Table 3: Examples of large thematic bonds from emerging markets

Multiple examples for thematic bonds exist, especially catering environmentally and social objectives, and have been deployed in emerging markets and developing economies given their potential to secure funding.

Sector-specific case studies:

3.1.1 Renewable energy

AC Energy in Vietnam and Philippines for solar and wind projects

AC Energy, part of the Ayala Group, launched a green bond initiative in Southeast Asia in 2019 which has had significant success. The \$1 billion green bond medium-term note program issued in 2019, comprised of 2 tranches – a 5-year tranche of \$360 million with 4.75% coupon per annum, and a 10-year tranche of \$110 million with a coupon 5.25% coupon. These bonds

⁸⁰ [World Bank, 2018](#)

⁸¹ [IIX Global, 2020](#)

⁸² [World Bank, 2022](#)

were aimed at financing RE projects across the region, contributing to AC Energy’s target of achieving 5 GW and subsequent 20 GW of renewable energy capacity by 2025 and 2030 respectively. The proceeds were directed primarily toward solar and wind projects in countries like the Vietnam, Philippines and Indonesia.

In compliance with the International Capital Markets Association’s Green Bond Principles (GBP) and the Climate Bond Initiative’s (CBI) certification process, AC Energy’s maiden green bonds, were the first CBI certified climate bonds in Southeast Asia, listed on the Singapore Stock Exchange. The Asian Development Bank subscribed to \$20 million of the bond issue, facilitating its compliance with GBP and CBI.

Projects funded by ACEN's green bond	Vietnam	Philippines
Solar	405 MW Ninh Thuan	120 MW Alaminos
	50 MW Khanh Hoa	63 MW Palauig
	30 MW Dak Lak	
Wind	80 MW Mui Ne	
	252 MW Quang Binh	

Table 4: Power projects funded by ACEN's green bonds⁸³

Additional green bonds were issued by AC Energy in succeeding years, expanding the company’s footprint in RE through its subsidiary ACEN Corporation in Australia, India, Indonesia, the Philippines and Vietnam. In January 2023, ACEN Corporation, through its subsidiary ACEN Australia, secured a significant Australian dollar \$277 million syndicated green loan facility from leading international banks. This funding aims to support the development and expansion of ACEN’s renewable energy projects in Australia, aligning with the company’s ambitious target to achieve 20 GW of renewable energy capacity by 2030, underscoring the commitment of a clean energy transition.⁸³

Factors for success:

- **Strategic partnerships:** Investments from development institutions like the IFC (\$75 million) and ADB (\$20 million) served as anchors, boosting investor confidence
- **CBI certification:** Certification and compliance to GBP ensured adherence to rigorous environmental standards, attracting environmentally conscious investors
- **Regional focus:** The emphasis on Southeast Asia aligned with regional energy transition goals, like ASEAN's target of 23% renewable energy by 2025
- **Market innovation:** As the first publicly listed green bond in the region, it mobilised both local and international capital

Performance:

The green bonds have helped AC Energy achieve nearly 50% of its energy output from renewable sources as of the latest assessments. With significant traction in key markets, the initiative has positioned the company as a leader in the renewable energy sector in Southeast Asia. AC Energy's successful integration of financial innovation, strong partnerships, and

⁸³ [ADB, 2023](#)

strategic alignment with regional energy goals serves as a model for renewable energy funding.⁸⁴

3.1.2 Energy efficiency

Indonesian's Green Bond and Green Sukuk Initiative

Indonesia⁸⁵ issued its first \$1.25 billion green Sukuk in 2018,⁸⁶ marking a significant milestone as the world's first sovereign green Islamic bond. This initiative was designed to support environmentally sustainable projects while adhering to Islamic finance principles. The bond had a 5-year maturity with a 3.75% coupon rate and was governed by Indonesia's Green Bond and Green Sukuk Framework, which received a medium-green rating from CICERO, reflecting its alignment with long-term climate goals.

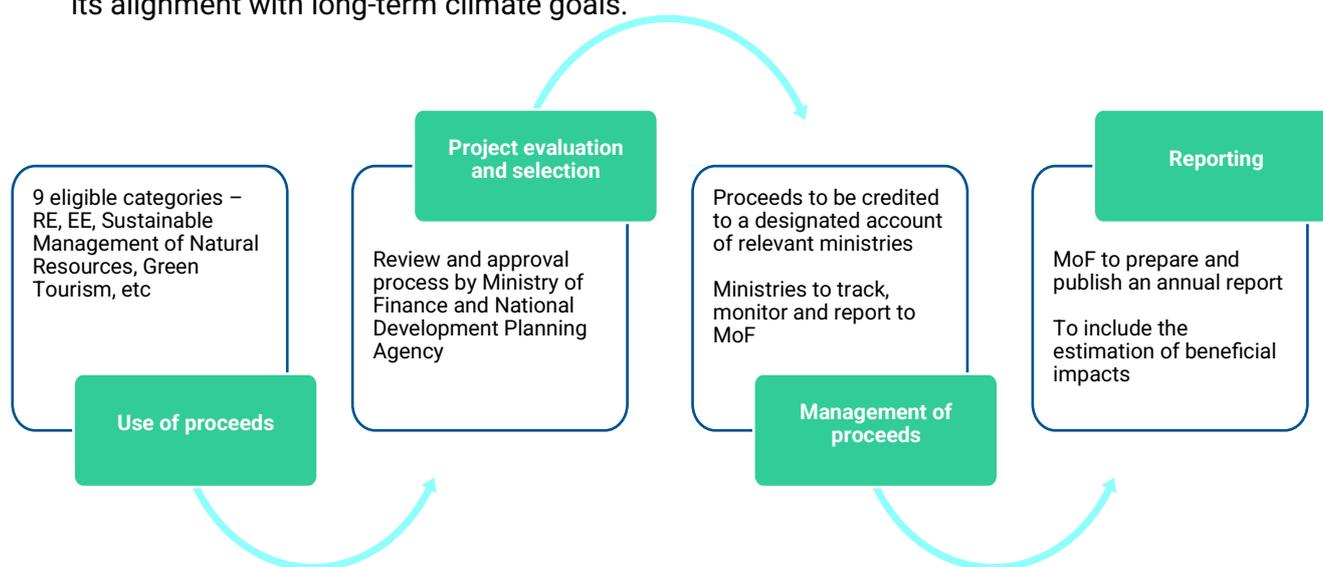


Figure 13: Indonesia's green bond and green sukuk framework⁸⁵

The green Sukuk's proceeds have been allocated to diverse sectors, including renewable energy, energy efficiency, sustainable agriculture, waste-to-energy projects, and climate resilience efforts. The energy efficiency projects specifically focused on enhancing energy management practices and retrofitting government buildings for reduced energy consumption. These efforts have contributed to Indonesia's broader climate objectives and SDG commitments.

The initiative was successful due to Indonesia's Climate Budget Tagging process, which identifies and tracks expenditures delivering climate benefits across various ministries. This systematic approach enabled the government to align its financial planning with climate mitigation and adaptation goals, ensuring accountability and transparency for investors. Furthermore, the green Sukuk helped mobilise private capital and fostered international investor confidence in Indonesia's commitment to sustainability.

Factors for success:

⁸⁴ [AC Energy, 2023](#)

⁸⁵ [UNDP & Republic of Indonesia, 2018](#)

⁸⁶ A green sukuk is an Islamic bond that uses its proceeds to fund environmentally sustainable projects

- **Strong framework and credibility:** Indonesia developed a robust Green Bond and Green Sukuk Framework aligned with international standards. It underwent an independent review by CICERO, which awarded it a "medium green" rating, signalling a credible commitment to environmental sustainability
- **Alignment with government climate goals:** The Sukuk aligns with Indonesia's Nationally Determined Contributions (NDCs) under the Paris Agreement and its Sustainable Development Goals (SDGs). This demonstrated a clear policy backing for climate finance
- **Innovative use of budget tagging:** The Climate Budget Tagging process helped identify eligible projects and ensure transparency in the allocation of proceeds. This mechanism allowed effective monitoring and reporting, building investor trust
- **Market confidence:** The issuance attracted interest from global and regional investors, including ethical and Islamic finance investors

Performance:

The inaugural issuance in 2018 raised \$1.25 billion, followed by subsequent issuances that reaffirmed its market success. Indonesia remains a pioneer in sovereign green Sukuk, having issued multiple tranches to date. Projects funded under the Sukuk framework have contributed to reducing greenhouse gas emissions, improving energy efficiency, and supporting renewable energy generation. For example, retrofitting government buildings and deploying renewable energy installations were among the funded initiatives. The Sukuk's strong performance has encouraged repeat issuances and served as a model for other countries. It demonstrated the potential for sovereign Islamic finance instruments to attract global capital for sustainable development

3.1.3 Electric vehicles

Mufin Green Finance's \$7 million green bond

In February 2023, Mufin Green Finance, a leading Indian non-banking financial company (NBFC) specialising in electric vehicle (EV) financing, raised a \$7 million green bond arranged by Symbiotics Investments.⁸⁷ This bond is part of a \$75 million green basket bond program structured in partnership with British International Investment (BII), the UK's development finance institution and impact investor.

With this green bond, Mufin aims to enhance its retail EV financing for two and three wheelers, primarily targeting electric rickshaws and three wheelers across India. The company plans to initially connect with 5,000 consumers and eventually expand its reach to over 100,000, thereby promoting wider adoption of electric vehicles. With these objectives, the company plans to cater to the underserved or low-income segment, creating meaningful social and climate impact. Therefore, combining the strengths of an NBFC and fintech, along with the power of stakeholders such as Symbiotics Investments which specialises in impact investments in emerging markets and BII, this phygital approach supports sustainable economic development.

⁸⁷ [Symbiotics Group, 2023](#)

Factors for success:

- **Targeted financing:** Focused on two and three-wheeler EVs, addressing a significant segment of India's transportation sector
- **Strategic partnerships:** Collaboration with Symbiotics and BII provided credibility and access to a broader investor base, enhancing fundraising efforts
- **Market demand:** The growing demand for sustainable transportation solutions in India created a favourable environment for the bond's success

Performance:

The green bond has enabled Mufin Green Finance to strengthen its EV financing portfolio, contributing to increased adoption of electric two- and three-wheelers in India. By targeting underserved and low-income segments, Mufin is making a significant social and environmental impact, aligning with global sustainability goals.

3.1.4 Agriculture

100% Agricultural Green Bond in India

The first 3-year \$100 million agricultural green bond⁸⁸ in India, launched by Symbiotics, a global market leader in impact investing, in partnership with Samunnati, India's largest agri-focused NBFC, marks a significant milestone in green finance. This innovative bond is designed to channel investments toward sustainable agricultural practices, aligning with India's goals for climate resilience and environmental sustainability.

Being the financial intermediary, Samunnati aims at utilising the proceeds to support farmers and agri-businesses across the value chain. The proceeds from the bonds are earmarked for projects that promote sustainable agriculture including climate-smart farming techniques, efficient water management, renewable energy adoption in agri-processing units, organic farming initiatives, etc. The bond adheres to internationally recognised ICMA's GBP, ensuring transparency and alignment with environmental objectives, and is to undergo rigorous impact reporting to measure outcomes.

The bond aims to enhance agricultural sustainability that improve productivity while minimising environmental degradation. Through this instrument, Samunnati can provide affordable credit to small and marginalised farmers and incentivise the adoption of sustainable practices. The proceeds are also targeted at supporting initiatives mitigating risks from climate change, such as drought-resistant crops and sustainable irrigation, while switching to RE through solar-powered solutions in farming and processing.

Factors for success:

- **Strong local partnerships:** Samunnati's deep understanding of the Indian agri-ecosystem ensures effective deployment of funds
- **Robust impact reporting:** Transparent metrics build investor confidence and attract more capital

⁸⁸ [Symbiotics, 2021](#)

- **Tailored solutions:** The bond addresses sector-specific challenges, making it a scalable model
- **Supportive policy ecosystem:** India’s focus on RE and sustainable agriculture enhances the bond’s relevance

Performance:

While the bond is in its initial stages, it is expected to demonstrate measurable impacts resulting in an increase in adoption in eco-friendly farming practices and improved livelihoods for smallholder farmers. Such an innovation also makes green bonds affordable for medium-sized NBFCs in emerging and frontier markets, fostering green finance inclusion.⁸⁹ This agricultural green bond sets a precedent for innovative financing in India’s agri-sector, highlighting the potential for scaling sustainable practices through targeted investments.

After having looked at different thematic bonds across various sectors, the different factors for success for thematic bonds, specifically green bonds here, can be summarised in the following table.

Parameters	RE	EE	EV	Agriculture
	AC Energy Green bond	Indonesia green sukuk	Mufin’s green bond	Symbiotics agricultural green bond
Regulatory alignment and support	X	X		
Innovation in product design	X	X	X	X
Stakeholder involvement and commitments	X	X	X	X
Technological innovations	X		X	
Alignment with local needs	X	X	X	X
Customisation to sector-specific needs	X	X	X	X
Vulnerable population inclusion and accessibility			X	X
Inclusion of value chain parameters		X	X	X
Market readiness	X	X	X	X
Transparency and reporting standards	X	X		

Implications for Cambodia

There is growing investor appetite in thematic bonds with more than 60% of surveyed investors and underwriters expressing their interest in exploring investment opportunities.⁹⁰ Recent successful issuances such as Golden Tree’s \$2.5 million green bond and CAMGSM’s \$20 million sustainability bond, demonstrate the market appetite. Furthermore, international investors like Manulife and Prudential have expressed their interest in the country’s sustainability bonds.⁹¹

Regulatory and policy landscape supporters:

Developments like GSS+ bond guidelines issued by the Securities and Exchange Regulator of Cambodia (SERC) and the Green Bond Issuance Handbook support in issuing and scaling up thematic bonds, specifically green and sustainability bonds in the nation. Initiatives like the Cambodia Sustainable Bond Accelerator Program, launched in 2023, aims to expand the development of the bond market. These guidelines and frameworks ensure in maintaining transparency and

⁸⁹ [Symbiotics, 2022](#)

⁹⁰ [ADB, 2022](#)

⁹¹ [Cambodia Investment Review, 2024](#)

integrity in the issuance process, mitigating greenwashing concerns. Clear definitions for use of proceeds and mandatory reporting aids in standardisation and adequate incentives as part of the government push helps in attracting national and international investors to tap into the nascent, but growing market.

Sector-specific potential:

RE:

- Growing interest in financing RE projects, for instance SCHNEITEC Dynamic Co. Ltd. Plans to issue \$50 million green bond to fund a solar photovoltaic power plant⁹²
- Investors and underwriters in Cambodia have identified RE as the sector with highest growth potential for green bonds⁹⁰

EE:

- EE has been identified as the 2nd most promising sector for green bonds in the nation by investors and underwriters

EV:

- Although EV-specific bonds haven't yet been issued, the government is promoting EV adoption through tax incentives and infrastructure development
- Growing demand for charging infrastructure, manufacturing facilities and EV fleet acquisitions would need financing

Agriculture:

- The Clean Energy Revolving Fund (CERF) has already demonstrated success in financing small-scale solar energy solutions for agri-businesses, thereby opening up avenues for scaling thematic bonds such as solar and green bonds to facilitate investments in agriculture
- Sustainable agriculture projects that reduce dependence on fossil fuel-based fertilizers could be attractive for green bond financing⁹³

⁹² [GGGI, 2024](#)

⁹³ [REEEP, 2023](#)

3.2 Green/climate funds

Green or climate funds are financial mechanisms established to support projects aimed at funding green, climate or sustainability interventions. Typically created by international organisations, governments, or coalitions of countries, these funds mobilise resources from various sources, including public budgets, private sector investments, and international donations. They leverage various financial instruments such as grants, concessional loans, equity investments, and guarantees to finance initiatives across multiple sectors. By providing targeted funding, risk-sharing and de-risking mechanisms, green/climate funds aim to facilitate the transition to low-carbon economies and enhance resilience against climate impacts in vulnerable communities.

Captured below are select funds that have mobilised financing for green, sustainability and climate-related interventions:

Fund	Fund size	Funding sources	Focus sectors	Types of instruments
Multilateral funds				
Green Climate Fund Supports developing countries in climate mitigation and adaptation interventions, ⁹⁴	\$12.8 billion pledged, \$13.5 billion portfolio, \$51.8 billion with co-financing, \$4 billion disbursed	Government pledges and private sector funding	Renewable energy, agriculture, infrastructure, ecosystems, industries, transport	Grants, concessional loans, guarantees, equity
Global Environment Facility Supports biodiversity, climate and pollution reduction projects, ⁹⁵	\$5.3 billion allocated, \$4.2 billion disbursed	Contributions from donor countries	Biodiversity loss, waste, land degradation, forest management	Grants, concessional loans
Adaptation Fund Supports climate adaptation projects for vulnerable communities in developing countries ⁹⁶	\$1 billion pledged, \$800 million disbursed	Contributions from governments and private donors	Agriculture, food security, water management, disaster risk reduction, forest management	Grants, concessional loans
Least Developed Countries Fund Supports least developed countries to strengthen climate resilience and implement their National Adaptation Plans, ⁹⁷	\$2.54 billion approved; \$23 million disbursed	ODA contributions from developed countries	Agriculture, water management, disaster risk reduction, infrastructure, sustainable livelihoods	Grants, concessional loans

⁹⁴ [Green Climate Fund, 2024](#)

⁹⁵ [Global Environment Facility, 2024](#)

⁹⁶ [Adaptation Fund, 2024](#)

⁹⁷ [Global Environment Facility, 2024](#)

Climate Investment Fund	\$12.1 billion pledged, \$10 billion portfolio, 60 billion in co-financing/disbursed	Contributions from government donors and private sector investment	Renewable energy, sustainable transport, forest management	Grants, concessional loans, guarantees
Supports climate mitigation and adaptation projects in low and middle incomes countries				
Regional funds				
ASEAN Catalytic Green Finance Facility (ADB)		ASEAN governments and the Asian Development Bank	Green infrastructure	Concessional loans, guarantees for bonds
Supports Southeast Asian governments in financing green infrastructure projects, ⁹⁸				
Asia-Pacific Climate Finance Fund (ADB)	\$14.4 million approved financial support	Multi-donor	Climate mitigation, adaptation, disaster risk management	Technical assistance, investment grants, direct charges
Supports the development and implementation of risk management products for climate projects in ADB member countries, ⁹⁹				
Climate Innovation and Development Fund (ADB, Bloomberg Philanthropies and Goldman Sachs)	\$25 million	ADB, Bloomberg Philanthropies and Goldman Sachs	Climate mitigation and adaptation, renewable power generation, sustainable transport, grid optimisation, agriculture and green manufacturing/consulting	Grants, concessional finance
Supports innovative climate solutions and technologies in India and Viet Nam, ¹⁰⁰				
Sector/thematic funds				
BioCarbon Fund Initiative for Sustainable Forest Landscapes	\$300 million pledged		Integrated land use	Grants, equity investments
Supports countries to reduce LULUC emissions, ¹⁰¹				
Forest Carbon Partnership Facility	1.3 billion in contributions & commitments	Contributions from government donors	Forest and carbon management	Grants, performance-based payments
Supports REDD+ initiatives to reduce emissions from				

⁹⁸ [ADB, 2024](#)

⁹⁹ [ADB, 2023](#)

¹⁰⁰ [ADB, 2023](#)

¹⁰¹ [BioCarbon Fund, 2024](#)

deforestation and forest degradation through the Readiness Fund and the Carbon Fund,¹⁰²

Water Resilience Trust Fund	\$20 million in contributions & commitments	ADB and the Government of the Netherlands	Water resource management, water resilience, water disaster risk management	Technical assistance and policy guidance
Supports water resilience projects in the Asia-Pacific region, ¹⁰³				

Table 6: List of Green/Climate Funds

Such funds provide substantial opportunities for accelerating capital towards key areas of intervention. There are various funds specifically targeted towards the critical sectors identified in this report. The following sections will outline some best practice case studies.

3.2.1 Renewable energy

Renewable Energy Asia Fund II

The Renewable Energy Asia Fund II (REAF II), managed by Berkeley Energy, is a private equity fund dedicated to renewable energy infrastructure investments across South and Southeast Asia. It's investors include entities such as the IFC,¹⁰⁴ FMO,¹⁰⁵ the Swiss Investment Fund for Emerging Markets,¹⁰⁶ and BIO Invest.¹⁰⁷ Building on the success of its predecessor, REAF, the fund focuses on markets where expanding renewable energy legislation, electricity sector deregulation, and demographic growth drive increasing demand for power. Key target countries include India, the Philippines, and Indonesia.¹⁰⁸

REAF II emphasises investments in projects deploying mature, operationally proven renewable energy technologies, such as small and medium-sized hydro, wind, solar photovoltaic, geothermal, and biomass. By focusing on technologies with established track records, the fund seeks to minimise technology risk. REAF II provides equity investments to development-stage renewable energy projects, guiding them through financial close, construction, and operational phases, with returns anticipated via individual project exits or consolidated portfolios categorised by region or technology.¹⁰⁹

REAF II operates as a closed-end private equity fund with a total committed capital of \$200 million. The fund targets renewable energy projects at the development stage, providing equity financing to support their progression through financial close, construction, and operational phases. By focusing exclusively on economically mature technologies with proven performance records, REAF II mitigates risks associated with new technologies.

¹⁰² [Forest Carbon Partnership Facility, 2024](#)

¹⁰³ [ADB, 2024](#)

¹⁰⁴ [IFC, 2015](#)

¹⁰⁵ [FMO, 2024](#)

¹⁰⁶ [Swiss Investment Fund for Emerging Markets, 2024](#)

¹⁰⁷ [BIO Invest, 2024](#)

¹⁰⁸ [Berkeley Energy: REAF II, 2024](#)

¹⁰⁹ [BIO Investment, 2016](#)

The fund’s strategy includes generating returns through individual project exits or by consolidating portfolios of assets organised regionally or by technology. It prioritises investments in countries with favourable renewable energy legislation and growing power demand, leveraging its expertise to ensure projects achieve successful commercial operations.¹¹⁰ Below is a summary of the fund’s target entities, financial structures and social impact goals.

Target entities	Financing instruments	Social impact criteria
<ul style="list-style-type: none"> Development-stage renewable energy projects Project developers in small hydro, wind, solar PV, geothermal, and biomass sectors 	<ul style="list-style-type: none"> Equity investments Active project development support 	<ul style="list-style-type: none"> Contribution to climate change mitigation Promotion of sustainable economic growth Enhancement of energy access in target regions

Table 7: REAF II Target Entities

Here are some notable initiatives funded by REAF II:

- **Quantum Solar Indonesia:** REAF II invested in the Gorontalo Solar Power Plant, a 10.8 MW (AC) solar photovoltaic facility equipped with single-axis trackers and 45,480 solar panels. Situated in the Molowahu community of Gorontalo Province, Indonesia, this project was one of the country’s first utility-scale solar ventures and was successfully commissioned in January 2020.¹¹¹
- **Lombok Solar in Indonesia:** Another key investment is the Lombok Sambelia Solar Power Plant, a 5.4 MW (AC) solar PV installation featuring single-axis trackers and 21,960 solar panels. Located in the Padak Selatan community of East Lombok Regency, West Nusa Tenggara Province, Indonesia, this project was commissioned in December 2019, further advancing utility-scale solar development in the region.¹¹²

Performance

REAF II has delivered measurable results in advancing renewable energy across its target markets. With \$200 million in committed capital, the fund has successfully supported eight renewable energy projects to date, focusing on small hydro, wind, solar, and biomass technologies. The Gorontalo and Lombok solar projects, with a combined capacity of 16.2 MW (AC), represent significant milestones in Indonesia’s transition to renewable energy, providing clean electricity to thousands of households while reducing carbon emissions. Furthermore, by targeting development-stage projects, the fund has played a crucial role in expanding renewable energy access and creating a more sustainable energy mix in South and Southeast Asia.

¹¹⁰ [Berkeley Energy: REAF II, 2024](#)

¹¹¹ [Berkeley Energy: Quantum Solar, 2024](#)

¹¹² [Berkeley Energy: Lombok Solar, 2024](#)

3.2.2 Energy efficiency

Thailand Energy Efficiency Revolving Fund

The Thailand Energy Efficiency Revolving Fund (TEERF) was established in 2003 by the Government of Thailand and is managed by the Department of Alternative Energy Development and Efficiency (DEDE) under the Ministry of Energy. It was designed to address limited access to capital for energy efficiency projects by leveraging public funds to stimulate private sector investments.¹¹³ The TEERF uses revenues from a petroleum tax, accumulating approximately \$50 million per year, with an overall balance of \$350 million by 2005.¹¹⁴ The fund plays a crucial role in promoting energy conservation, reducing GHG emissions, and fostering a market for energy-efficient technologies.

TEERF operates through a well-defined structure to address financing barriers for energy efficiency projects. The fund provides credit lines to participating commercial banks at zero interest, enabling them to on-lend to eligible borrowers, such as factories, commercial buildings, energy service companies (ESCOs), and energy efficiency project developers, at interest rates capped at 4%. Initially, the fund covered up to 50% of the capital required for loans, later reduced to 30%, encouraging greater private sector participation. Loans are offered for up to 100% of project costs, capped at US\$1.4 million per project, with tenors of up to seven years.¹¹⁵

Target entities include industrial facilities seeking to upgrade machinery, commercial buildings pursuing energy-efficient retrofits, and ESCOs implementing projects for smaller businesses unable to afford upfront investments. By design, the fund supports these sectors to reduce GHG emissions, promote sustainability through energy savings, and encourage the adoption of advanced energy-efficient technologies. TEERF's revolving nature ensures loan repayments are recycled into new projects, sustaining its financial impact. This structure allows for risk-sharing between the fund, banks, and project proponents while minimising government exposure and fostering market growth for energy efficiency solutions.

TEERF has supported a variety of initiatives across sectors to promote energy efficiency. In the industrial sector, the fund has financed upgrades to high-efficiency machinery, enabling factories to significantly reduce energy consumption in production processes. In commercial buildings, TEERF has facilitated improvements in energy performance by funding retrofits such as lighting and air conditioning upgrades. Additionally, the fund has played a critical role in empowering ESCOs by providing capital for energy-saving projects. This support has allowed smaller entities, often unable to access upfront financing, to adopt and implement energy-efficient solutions, thereby expanding access to sustainable energy practices. Together, these initiatives showcase TEERF's pivotal role in driving energy efficiency improvements across diverse sectors in Thailand.

Factors for success:

¹¹³ [World Bank Group, 2012](#)

¹¹⁴ [Frankfurt School - UNEP Collaborating Centre for Climate & Sustainable Energy Finance, 2012](#)

¹¹⁵ See footnote 97 for more information

- **Risk allocation:** The primary risks of loan defaults are borne by borrowers and participating banks, minimising risk to the government
- **Cost-effectiveness:** The government provides zero-interest credit lines, while administrative and operational costs are primarily handled by banks
- **Capacity building:** DEDE provides technical assistance for project developers and banks, enhancing the quality of project proposals and reducing default risks
- **Program sustainability:** The revolving nature of the fund allows repaid loans to be reinvested, enabling continuous funding of new projects

Performance

TEERF has demonstrated significant financial and operational outcomes since its establishment. By 2012, the fund had financed 294 projects, mobilising total investments of approximately \$180.5 million across diverse sectors.¹¹⁶ These projects achieved annual energy savings of 1,170.66 million kWh of electricity and 234.35 million litres of oil, contributing to cost reductions for borrowers and improved operational efficiency. The fund's financial model achieved a leverage ratio of 3:1, with private banks contributing 3x the capital provided by TEERF. Its revolving mechanism ensured sustainability by recycling repaid loans into new projects, allowing the fund to expand its reach and financial impact. Through its targeted capacity-building initiatives, TEERF also improved the financial viability of energy efficiency projects, further strengthening private sector participation and scaling energy-efficient practices in Thailand.

3.2.3 Electric vehicles

ADB Ventures Investment Fund

ADB Ventures, the venture capital arm of the ADB, is committed to driving innovation in Asia and the Pacific through investments in early-stage companies addressing critical development challenges. Investors of this fund include the Ministry of Foreign Affairs Finland, Clean Technology Fund, Nordic Development Fund, and the Ministry of Economy and Finance Republic of Korea and is supported by the Department of Foreign Affairs and Trade Australia, Clean Technology Fund and Nordic Development Fund in project preparation.¹¹⁷

Among its key focus areas are electric mobility, clean energy, and climate resilience, aiming to accelerate the transition to low-carbon solutions. By prioritising sustainable mobility, ADB Ventures targets investments in companies pioneering EV technologies and infrastructure, supporting the adoption of cleaner and more efficient transportation systems across emerging markets. The fund also invests in technologies that enhance energy efficiency, reduce GHG emissions, and promote inclusive and sustainable economic growth.

Operating under ADB Ventures Investment Fund 1, the fund pools resources from institutional investors and sovereign donors to provide patient capital to early-stage technology companies. Its investments, structured as equity or convertible notes, are tailored to scale transformative solutions, particularly in sectors where electrification and clean energy can

¹¹⁶ See footnote 97 for more information

¹¹⁷ [ADB Ventures, 2024](#)

have the greatest impact. By leveraging ADB's extensive regional network and expertise, ADB Ventures facilitates co-financing, encourages private-sector participation, and supports the growth of climate-friendly innovations.¹¹⁸

ADB Ventures is designed to accelerate the adoption of clean energy and electric mobility solutions by supporting early-stage technology companies with high-impact potential. Through its Investment Fund 1, it provides equity investments and convertible notes to startups and scale-ups in emerging markets. Investments range up to \$4 million per company, with tenors of 5–7 years, and focus on scaling transformative technologies in electric mobility and clean energy.

The fund leverages ADB's regional expertise to crowd in private capital, enabling companies to overcome barriers to financing and market adoption. Its investments prioritise technologies that reduce emissions and operational costs, particularly in the electric vehicle (EV) sector, including EV manufacturing, battery technology, and charging infrastructure. ADB Ventures also ensures long-term sustainability by fostering partnerships and promoting gender equality within its portfolio.

Here are some notable examples of the types of initiatives financed by ADB Ventures:

- *Euler Motors in India:* ADB Ventures invested in Euler Motors, an Indian company revolutionising last-mile logistics with its EV solutions. Euler's flagship product, the HiLoad electric three-wheeler, features a 12.96 kWh battery pack and an ARAI-certified range of 170 km.¹¹⁹ Designed for urban delivery operations, the HiLoad EV replaces diesel-powered vehicles, significantly reducing carbon emissions and operating costs for businesses. The investment has supported Euler in scaling its production capacity, expanding its market reach, and opening multiple retail outlets in Delhi NCR. Euler's EV solutions exemplify the potential of electric mobility to transform urban transport while addressing climate and economic challenges.¹²⁰
- *Selex Smart Electric Vehicles JSC in Viet Nam:* In Viet Nam, ADB Ventures invested up to \$4 million in Selex Smart Electric Vehicles, a leading manufacturer of electric two-wheelers and battery systems. Selex's vehicles are tailored for high-usage applications such as last-mile cargo delivery and passenger transport, providing a sustainable alternative to petrol-powered motorcycles. Each Selex electric two-wheeler reduces emissions by approximately 0.45 tonnes of CO₂ equivalent annually. The investment also enables Selex to scale its battery-swapping infrastructure, facilitating widespread adoption of EVs in Viet Nam. By addressing both vehicle affordability and charging accessibility, Selex is advancing the transition to cleaner mobility.¹²¹

Performance

¹¹⁸ [ADB Ventures, 2024](#)

¹¹⁹ [Economic Times, 2023](#)

¹²⁰ [ADB Ventures: Euler Motors, 2024](#)

¹²¹ [ADB Ventures, 2023](#)

ADB Ventures has made a significant impact in advancing electric mobility and clean energy in Asia. Through its portfolio, the fund has supported over 50 companies across 18 countries, focusing on solutions that reduce GHG emissions and foster sustainable development. Investments in EV companies such as Euler Motors and Selex have catalysed the deployment of clean transportation technologies, directly contributing to the reduction of carbon emissions and the expansion of EV adoption in urban and high-use sectors. By mobilising private capital and leveraging ADB's regional network, ADB Ventures has positioned itself as a key enabler of the shift to sustainable electric mobility in emerging markets.

3.2.4 Agriculture fund

Agri-Business Capital Fund (ABC Fund)

The ABC Fund under the International Fund for Agricultural Development (IFAD) invests directly in smallholder farmers, small to medium-sized agribusinesses (SMEs) and indirectly, through financial intermediaries to promote sustainable and inclusive value chains the agricultural sector.¹²² The fund received financial contributions from the European Commission, the Organisation of Africa, Caribbean and Pacific States, IFAD, Luxembourg the Alliance for a Green Revolution in Africa and the Swiss Development Cooperation.¹²³

The fund focusses on increasing market participation and integration, tackling bottlenecks within the value chain, improving certification, traceability and local processing for exports, and encouraging the adoption of climate-smart agricultural practices, technologies and solutions.¹²⁴

The fund provides working capital facilities, term loans and subordinate debt/equity for ventures, along with technical assistance to strengthen capacities across business development, operations, governance and financial management to bolster ventures and reduce risks.

Target entities	Financing instruments			Social impact criteria
SMEs and smallholders				
<ul style="list-style-type: none"> Producers, aggregators and processors of primary agricultural products Input and equipment suppliers Service providers & logistics Processors of secondary agricultural products 	Type	Tenor	Range	High social impact contribution to: <ul style="list-style-type: none"> Strengthening rural employment and supporting income-generating households Increasing productivity and commercial performance of economic actors
	Working capital facilities	Up to 2 years, typically 6-12 months	€200-400,000	
	Term loans	3-5 years	€400-800,000	
	Subordinate debt/equity	5-7 years	€400-800,000	
Financial intermediaries				

¹²² [Agri-Business Capital Fund, 2024](#)

¹²³ [IFAD, 2024](#)

¹²⁴ [ABC Fund, 2020](#)

<ul style="list-style-type: none"> Traditional financial institutions Insurance providers Non-banking financial intermediaries Alternative and fintech lenders 	Type	Tenor	Range	Generate positive impact towards: <ul style="list-style-type: none"> Addressing financing needs of SMEs and smallholders High ESG standards
	Term loans	3-5 years	€1-4 million	
	Subordinate debt/equity	5-7 years	€200-500,000	

Table 8: ABC Fund's Target Entities

Some notable examples of the types of initiatives financed by the fund include the following:

- **SME financing: Africa Négoce Industries (ANI) in Benin:** ANI, a raw cashew nut processor in Benin, collects cashew nuts from farmer cooperatives and processes them for export. With support from the ABC Fund, ANI received an €800,000 loan to purchase more raw cashew nuts and expand operations, allowing it to source directly from smallholder farmers rather than aggregators. This funding enhances market access for farmers, providing them with stable prices and improving their livelihoods
- **Financial intermediary financing: Success for People (SfP) in Ghana:** SfP, a Tier 2 microfinance institution in Ghana, focuses on providing credit and savings opportunities to smallholder farmers and women's groups often excluded from traditional banking. With a EUR 1 million facility from fund, SfP aims to disburse over 7,000 loans in 3 years, with at least 80% directed to female borrowers. This funding not only enhances access to financial services for underserved populations but also supports SfP's commitment to building entrepreneurs' capacity through training, ultimately fostering economic empowerment and financial inclusion

Factors for success:

- **Targeted financial products:** The ABC Fund offers a range of products specifically designed to meet the needs of smallholders and SMEs
- **Focus on inclusivity:** the fund prioritises investments that promote sustainable economic opportunities for vulnerable and marginalised groups, contributing to larger development goals such as poverty reduction in rural areas
- **Strong partnerships:** the fund benefits from partnerships with stakeholders such as the European Union, the Organisation of African, Caribbean and Pacific States (OACPS), Luxembourg Aid and Development, the Swiss Agency for Development and Cooperation and AGRA

Performance:

As of 2023, the ABC Fund has cumulatively deployed €43 million in investments in 12 African and Latin American countries, across 33 ventures.^{125,126} According to the fund's 2023 Impact Report, the fund's capital impacted about 237,000 hectares of land, supporting 206,000 smallholder farmers in 2023. 61% of smallholders financed by the fund are women, and 37% are youth (15-35 years old). The fund has also catalysed sustainable rural employment,

¹²⁵ [Bamboo Capital Partners, 2023](#)

¹²⁶ [ABC Fund, 2023](#)

creating 749 new permanent jobs. The fund has impacted incomes, livelihoods and encouraged the penetration of sustainable agricultural practices in target countries. Additionally, the technical assistance facility in the fund has also supported SMEs and smallholders in strengthening pre- and post-investment business processes and governance. Pre-investment technical assistance aims to bridge gaps making propositions more bankable by strengthening business plans, establishing off-taker contracts and enhancing financial management, whereas post-investment support aims to enhance the growth and performance of ventures.

Parameters	RE	EE	EV	Agriculture
	REAF II	TEERF	ADB Ventures	ABC Fund
Regulatory alignment and support	X			
Innovation in product design	X	X	X	
Stakeholder involvement and commitments	X	X	X	X
Technological innovations	X	X	X	
Alignment with local needs	X	X	X	X
Customisation to sector-specific needs	X	X	X	X
Vulnerable population inclusion and accessibility				X
Inclusion of value chain parameters			X	X
Market readiness	X	X	X	X
Transparency and reporting standards	X	X	X	X
Implications for Cambodia				

Green and climate funds, such as the multilateral and bilateral funds, regional funds and sector-specific funds, can be significantly tapped into for bolstering sector-specific growth and cover the large financing gap. Cambodia's successful engagement with the GCF and other international funds indicates a strong appetite for green financing and other innovative funding mechanisms.

Recent developments and initiatives:

- The Cambodia Climate Financing Facility (CCFF) has been approved by the Green Climate Fund with \$100 million in concessional financing. Supporting RE, EE, sustainable agriculture and low-emission transportation, this facility aims to provide wholesale funding to financial institutions and support sustainable private sector projects¹²⁷
- The ADB has approved a \$50 million policy-based loan package and \$23 million project investments to support Cambodia's energy transition. Of this, 80% comes from ADB's concessional sources and 20% from the ASEAN Infrastructure Fund under its ASEAN Catalytic Green Finance Facility. This program supports the country's energy transition agenda for RE and EE, promoting new technologies¹²⁸
- The National Solar Park Program, supported by the Climate Investment Fund and ADB, uses concessional and grant financing to incentivise solar projects¹²⁹

¹²⁷ [Khmer Times, 2024](#)

¹²⁸ [ADB, 2022](#)

¹²⁹ [API, 2020](#)

As a result, Cambodia has successfully engaged with multiple funds but can deepen its reach with other multilateral and sector-specific funds. The country's supportive policy environment, increasing engagement with international funds, and successful pilot projects provide a solid foundation for leveraging these funds to accelerate sustainable development and green finance market growth in Cambodia.

Table 9: Factors of success for the above case studies for green/climate funds and implications for Cambodia

3.3 Blended finance

Blended finance utilises public and philanthropic funding to draw in private sector investments for sustainability and climate initiatives. This approach enables financial institutions with varying objectives to engage in sustainability projects by reducing associated risks and enhancing their appeal to private investors. Risk reduction is accomplished through various mechanisms, including concessional capital, guarantees, risk insurance, technical support, and grants for project design, with concessional debt or equity being the most frequently employed tools.¹³⁰

In 2023, the blended finance market experienced a significant rebound, achieving its highest annual financing total of \$18.3 billion, a 120% increase from \$8 billion in 2022. Investments in climate-related interventions were pivotal in this growth, making up approximately 57% of the market capitalization, which stands at \$132 billion. Over the past three years, climate blended finance transactions accounted for 1/3rd of all recorded deals. Development finance institutions (DFIs) and multilateral development banks (MDBs) have also played a crucial role, with private sector investment in climate blended finance surging nearly 200% to \$6 billion. Notably, about 90% of the capital for climate blended finance deals came from DFIs/MDBs and private investors, with a significant portion targeting Latin America and the Caribbean. Additionally, the mobilisation ratio of concessional capital to private investment substantially improved to 2.65 in 2023, indicating increased efficiency in attracting private funds.¹³¹

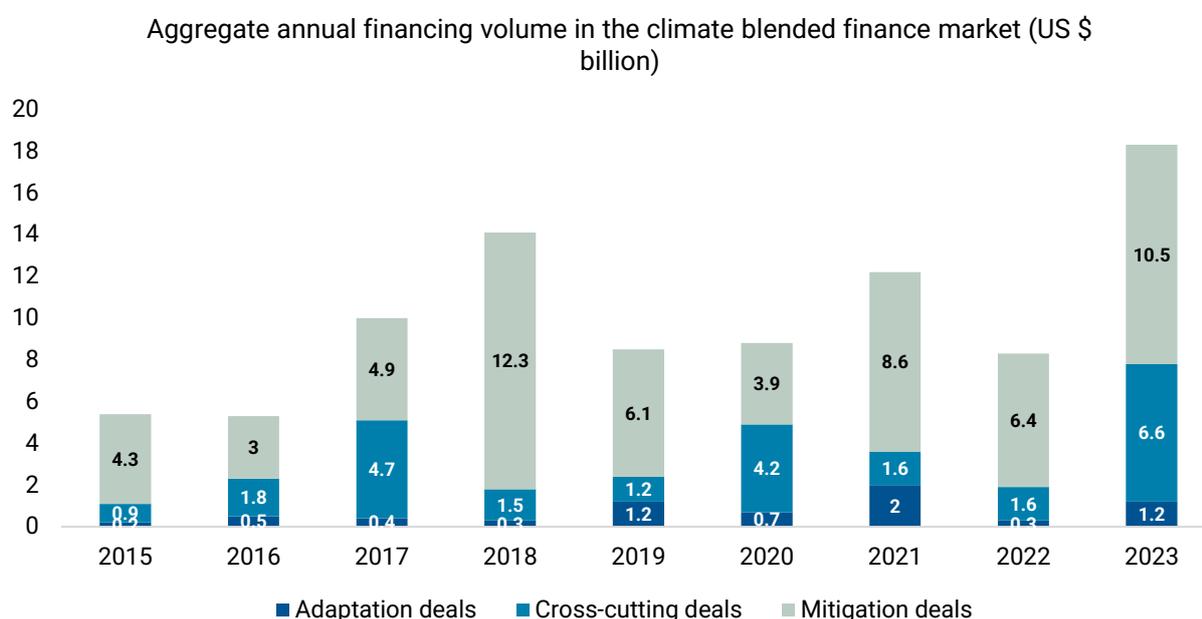


Figure 14: Aggregate annual financing volume in the climate blended finance market (US \$ billion)

¹³⁰ [Convergence, 2024](#)

¹³¹ [Convergence, 2024](#)

Proportion of climate blended finance transactions by archetype

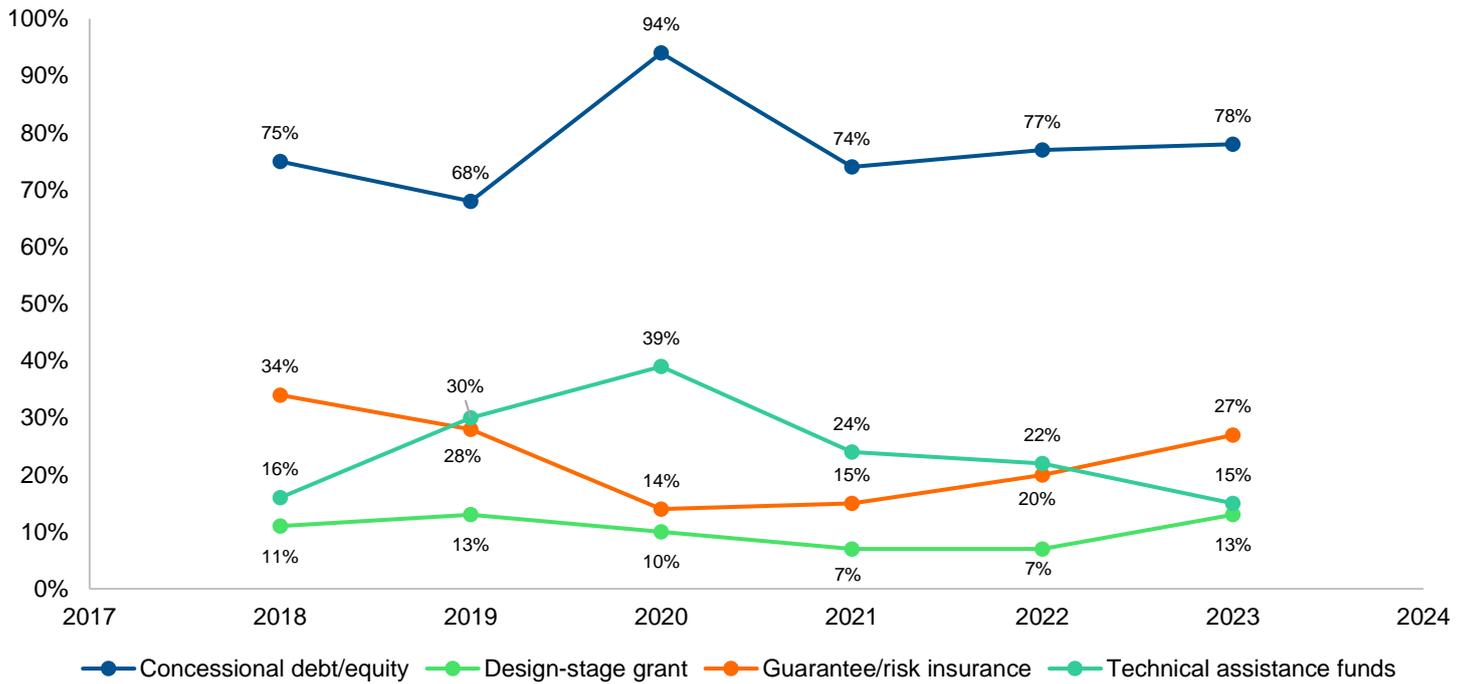


Figure 15: Proportion of climate blended finance transactions by archetype

Concessional debt

Public and/or philanthropic investors providing financing on below-market terms, enhancing its credit profile or adding loss protection for more senior investors

Design-stage grants

Project design, preparation and structuring activities grant-funded to ensure bankability and accelerate transactions

Guarantees/risk insurance

Public and/or philanthropic investors extending partial/full guarantees/insurance instruments on below-market terms to de-risk investments (i.e., currency risk, political risk)

Technical assistance funds

Transactions linked with grant-funded technical assistance to finance pre- and post-investment, and cost-of-investment

Concessional debt/equity represent the most prevalent archetype used in blended structures, usually utilising senior debt deployed by DFIs and MDBs sourced through donor-funded blended finance capital pools, in conjunction with their own lending activities. Guarantees and risk insurance have also experienced a surge in recent years, with well-structured concessional credit guarantee facilities mobilising 6-25x more financing, in comparison to traditional debt. Senior debt, partial guarantees, subordinate debt, first-loss debt/equity, senior and junior equity make up the most common concessional sub-instrument used in blended finance transactions.¹³²

¹³² [Convergence, 2024](#)

East Asia, the Pacific and South Asia are the 2nd most targeted regions for climate blended finance, accounting for 28% of deals between 2021-2023. The region’s substantial dependence on coal during its rapid economic growth has led to high GHG emissions, making climate a key priority. On the other hand, the Convergence’s 2023 assessment of blended finance in the ASEAN region highlighted renewable energy as a critical priority sector in terms of deal volume, accounting for 41% of transactions. Financial service transactions, specifically targeting microfinance, make up the second largest sub-sector, accounting for 19% of deals in the region.¹³³

Proportion of climate blended finance transactions by type of climate action

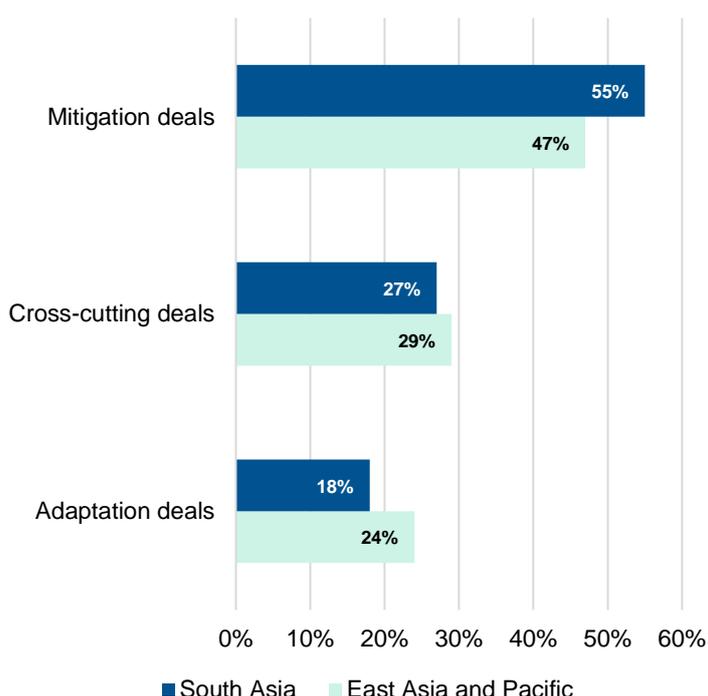


Figure 16: Proportion of climate blended finance transactions by archetype

Aggregate financing by country (US \$ billion)

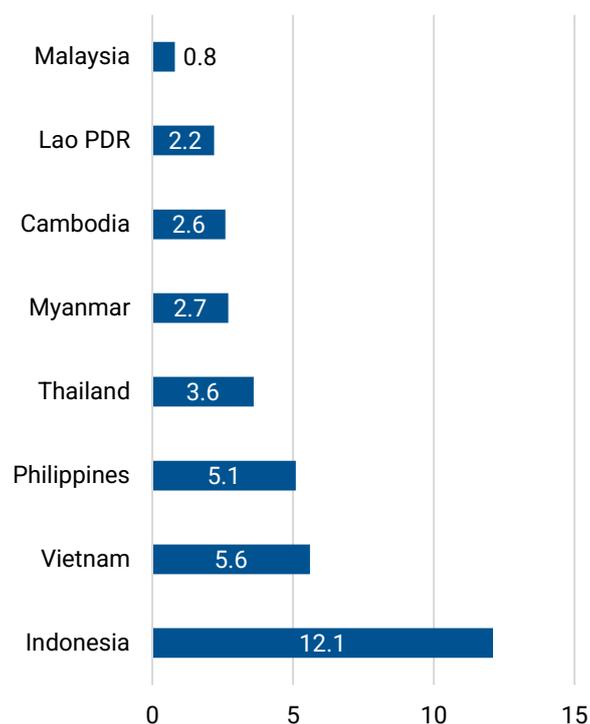


Figure 17: Aggregate financing by country (US \$ billion)

Some notable examples of blended finance facilities include the following:

Name	Funders/financiers	Facility size	Instruments	Sectors
Philippines Water Revolving Fund Facility Provides financing for water supply and sanitation projects through a revolving fund mechanism, ¹³⁴	Government of Philippines, Japan Bank of International Cooperation, USAID, private financial institutions and domestic banks	\$234 million	Concessional loans, technical assistance	Water supply, sanitation
Catalytic Climate Finance Facility	Climate Policy Initiative, Convergence, Global Affairs Canada, Bill &	\$13 million (targeting \$100 million)	Grant funding, technical assistance	Climate/sustainability interventions

¹³³ [Convergence, 2023](#)

¹³⁴ [World Bank, 2016](#)

Supports market-ready blended finance vehicles for climate initiatives, ¹³⁵	Melinda Gates Foundation, Government of Australia, Rockefeller Foundation				
Blue Alliance Blended Finance Vehicle	Various including Convergence, UNDP, UNCDF, Joint SDG Fund,	\$12 million, ¹³⁷	Grants, debt financing, equity, technical assistance	Marine conservation, fisheries	
Focusses on early-stage funding in reef-positive businesses to strengthen conservation of Marine Protected Areas in the Philippines, Zanzibar, Indonesia and Belize ¹³⁶					
Global Fund for Coral Reefs	UNDP, UN CDF, UNEP, 60 governments, Bloomberg Philanthropies, Minderoo Foundation, UBS Optimus Foundation and private investors	\$625 million	Grants, debt financing, technical assistance, blue carbon and biodiversity credits	Marine conservation, biodiversity	
Aims to protect coral reefs through a blended finance approach in countries with vulnerable coral regions, ¹³⁸					
Uzbekistan Zarafshan Wind Farm Blended Finance Facility	Abu Dhabi Future Energy Company, IFC, Japan International Cooperation Agency, FMO, EBRD, ADB, Natixis, First Abu Dhabi Bank	\$580 million	Loan facility, non-recourse untied cover, covered lending, off-taker credit, partial risk guarantee, VAT facility	Wind energy	
Aims to develop Central Asia's largest wind farm, ^{139, 140}					
Cloud Forest Blue Energy Mechanism	Conservation International, The Nature Conservancy, FMO, IDB, GEF	\$30 million (implementation phase)	Pay-for-success contracts, grants	Ecosystem restoration	
Engages hydropower operators to pay for upstream forest conservation and restoration in Latin America, ¹⁴¹					
Ag360 Climate Facility	Big Valley Advisors, Puro.earth, CGIAR, Enabling Capital, International Biochar Initiative	\$150 million	Patient debt capital, junior first loss tranches, mezzanine debt, unsecured and secured senior debt, profit participation,	Waste-to-energy, biochar production, regenerative agriculture, carbon sequestration, food security	
Supports bioeconomy solutions in the Global South, focussed on gender-responsive circular agriculture projects ¹⁴²					

¹³⁵ [Catalytic Climate Finance Facility, 2024](#)

¹³⁶ [Blue Alliance Blended Finance Facility, 2024](#)

¹³⁷ [Blue Alliance Blended Finance Facility, 2024](#)

¹³⁸ [Global Fund for Coral Reefs, 2024](#)

¹³⁹ [UNEP FI, 2023](#)

¹⁴⁰ [IFC, 2022](#)

¹⁴¹ [Nordic Development Fund, 2021](#)

¹⁴² [Convergence, 2024](#)

				long-term debt financing, ¹⁴³	
Inclusive Climate Action Scaleup Facility	Villgro, Foundation	Innovations	\$10 million (over the next few years)	Debt financing, collateral-free lending, risk transfers, guarantees, credit guarantee	Green technologies
Supports gender-inclusive climate technology social enterprises in India, ¹⁴⁴					

Table 10: Examples of blended finance facilities

3.3.1 Renewable Energy Zimbabwe Gender-Responsive Clean Energy Facility

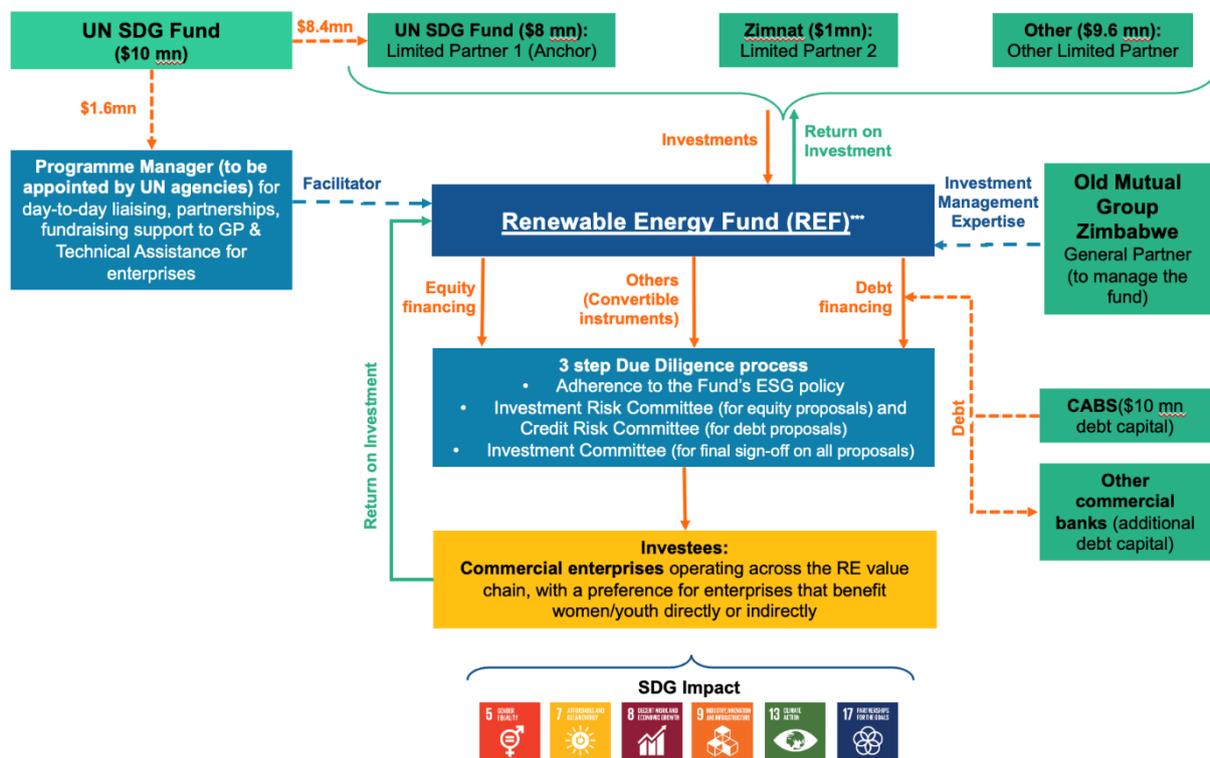


Figure 18: Zimbabwe Gender-Responsive Clean Energy BF Facility

auctusESG collaborated with the Government of Zimbabwe, UNDP, UN Women and UNESCO Zimbabwe to establish a blended finance facility to finance renewable energy projects focussing on the youth and women in the country.

The facility aims to address energy access challenges by bridging existing financing gaps for clean energy, while also providing technical assistance to increase the bankability of such interventions. This facility specifically aims to provide financing to gender-responsive clean energy businesses. The facility focuses on financing interventions in decentralised renewable energy (DRE) solutions, such as mini-grids, off-grid networks, clean cookstoves, e-transport,

¹⁴³ [Convergence, 2023](#)

¹⁴⁴ [Convergence, 2023](#)

solar lamps, and chargers—areas that have remained largely untapped in Zimbabwe. This structure aimed to attract private capital by utilising philanthropic grants as a backstop against project/country risks such as currency fluctuations and exchange rate volatility.

The facility pools funds and deploys them to selected renewable energy projects, providing a mix of debt-based, quasi-equity and grant-based instruments, tailored to address specific challenges in the Zimbabwean context, including the lack of long tenor finance, high interest rates for loans and a general hesitance to invest in green projects.

Type	Instrument	Description	Ratio of pool
Debt Suitable for commercial RE developers with prior experience, looking to fill an equity gap/raise additional finance from other investors	Concessional loans	Concession on interest rate (between 5-10%), interest holidays, grace periods, extended tenors	60%
	Convertible loans	Partial or full conversion to grants, and not repaid if the project is unsuccessful/does not provide adequate returns	
Quasi-equity Suitable for all types of RE projects, especially ones at the stage of setting up infrastructure, either to begin or expand	Preference shares	Minority, but preferential shareholding to provide viability	20%
	Asset-backed leasing	Purchasing a component of required asset, and leasing it to the project	
Grants Suitable for small projects, women-led, youth-led, community-owned, where a small amount of funding has been raised from other grants/debt/equity instruments	Convertible grants	Reimbursable grant with an option to convert to debt or minority equity stake under specific conditions	20%
	Hybrid grants	Multi-component funding – where one component is a pure grant, while remaining (ideally, majority portion) is debt/equity	

Table 11: Zimbabwe BF Facility (financing components)

Factors for success:

- **Targeted focus:** concentration on gender-responsive clean energy projects, specially aimed address energy access challenges
- **Diverse financial instruments:** provision of a mix of debt, quasi-equity and grant based instruments are tailored to the specific needs and challenges of the Zimbabwean context
- **Robust risk mitigation framework:** utilising philanthropic grants as a backstop against project risks, including currency fluctuations and FX risk attracts private capital
- **Engagement with local stakeholders:** collaboration with multiple UN agencies and government ministries, NGOs, RE companies and other partners ensures alignment with national priorities and allows for more meaningful implementation of the program

Performance:

The facility has since grown into a comprehensive \$45 million facility focused on increasing renewable energy capacity from 142 megawatts (MW) to over 2,000 MW by 2030.¹⁴⁵ No further impact metrics are currently available.

3.3.2 Energy Efficiency

China Utility-Based Energy Efficiency Blended Finance Facility (CHUEE)

The CHUEE blended finance facility was designed to promote energy efficiency interventions in China, particularly targeting SMEs, households and other end-users, in 2006. The primary purpose of the facility was to address the significant financing gaps in the energy efficiency sector by leveraging public and private investments to support clean energy initiatives and contributing to the country’s larger energy consumption and GHG emission reduction objectives. By targeting SMEs and households, the facility sought to facilitate the adoption of energy-efficient technologies and practices that can lead to substantial cost savings and improved energy performance.¹⁴⁶

The CHUEE facility is structured to combine various funding sources, including public funds from international development organisations and private sector investments. It blends concessional financing from public sources with commercial capital from private investors and uses guarantees and risk-sharing to lower risks for investors. The facility is partially funded by the GEF with a grant of \$16.5 million, and \$3 million from Finland’s Ministry of Trade and Industry.¹⁴⁷

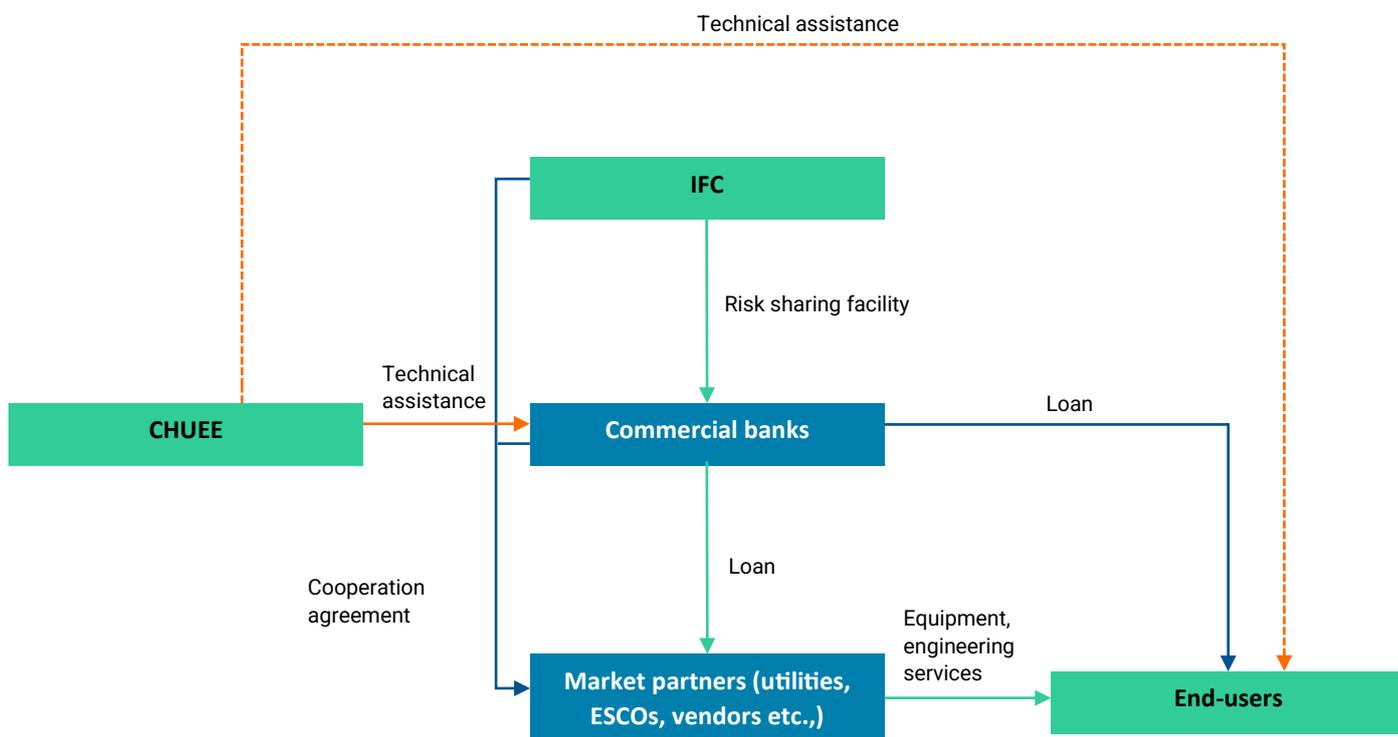


Figure 19: CHUEE BF Facility (structure)

¹⁴⁵ [UN Zimbabwe, 2024](#)

¹⁴⁶ [World Bank, 2010](#)

¹⁴⁷ [IFC, 2006](#)

The risk-sharing facility was provided by the IFC to commercial banks, where IFC bore part of the potential losses on loans advanced by commercial banks.¹⁴⁸ Loans provided had a maximum duration of 5 years, where borrowers covered about 20% of project-related costs. Additionally, IFC and local commercial banks provided loan guarantees and cooperation agreement (for eg. joint marketing initiatives, customer awareness etc.) when banks lent to ESCOs, utilities, vendors and end customers.¹⁴⁹

Factors for success:

- **Diverse financial instruments:** a mix of financial instruments allow the facility to tailor financing to the needs of various projects and stakeholders
- **Robust risk mitigation:** concessional financing and guarantees effectively mitigate perceived risks, making energy efficiency interventions more attractive to private investors
- **Public-private partnerships:** collaborations with local banks fosters a supportive ecosystem
- **Market development focus:** the facility fosters the Chinese energy efficiency market

Performance:

CHUEE has deployed loans worth \$790 million for 226 projects, reducing the equivalent of 19 million tons of carbon dioxide annually. The facility has successfully expanded into new areas, including support for SMEs that often consume more energy than larger industrial operations. CHUEE has mobilised nearly \$1.8 billion in additional funding. For instance, a partner bank broadened its operations to implement 29 energy efficiency projects across China, demonstrating how capacity-building efforts facilitate project expansion.¹⁵⁰

3.3.3 Electric Vehicles

World Bank & SIDBI EVOLVE Blended Finance Facility

The World Bank, the Korea-World Bank Partnership Facility and the Korean Economic Development Cooperation Fund (EDCF) have partnered with the Small Industries Development Bank of India (SIDBI) for the Electric Vehicle Operations and Lending for a Vibrant Ecosystem (EVOLVE) program, with the Government of India and NITI Aayog, under the National Mission on Transformative Mobility and Battery Storage. This facility aims to accelerate financing for two and three-wheeler EVs, along with charging infrastructure in India.¹⁵¹ Additionally, it aims to address the higher rate of interest and limited availability of EV financing.

The facility aims to support participating financial institutions through capital adequacy relief, reduced credit default losses, access to lower-cost funds and affordable financing for borrowers, accelerated EV adoption, monetisation of carbon credits, as well as capacity building and de-risking.¹⁵²

¹⁴⁸ [World Bank, 2011](#)

¹⁴⁹ [World Bank, 2010](#)

¹⁵⁰ [UNFCCC, 2023](#)

¹⁵¹ [ETN, 2023](#)

¹⁵² [SIDBI, 2024](#)

The facility uses SIDBI as its borrower and manager, which receives a \$50 million investment project finance standard loan, a \$75 million loan, a \$25 million concessional loan and a \$100 million investment project finance with a deferred drawdown option, contingent on partial credit guarantees. This financing is then on-lent to the tune of \$125 million to EV loan portfolios, with a \$125 million second loss guarantees to participating financial institutions.¹⁵³

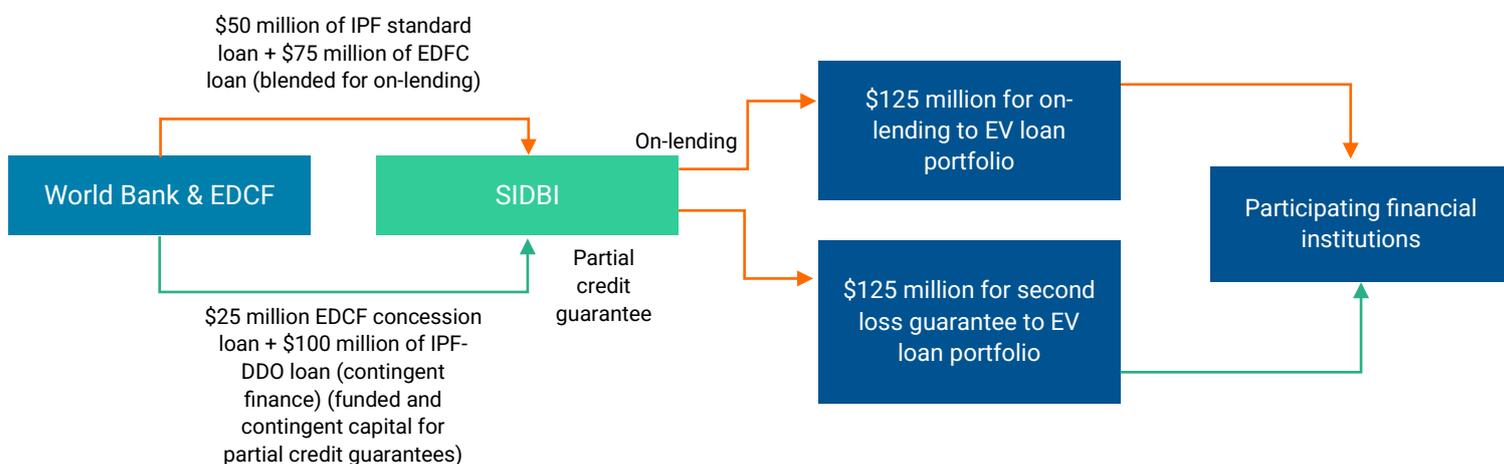


Figure 20: World Bank and SIDBI Evolve BF Facility (structure)

This facility has been newly launched in 2023, and so far, has no impact or success metrics. Regardless, its **factors for future success** include:

- **Strong institutional partnerships:** the established partnerships with the World Bank, EDFC and Indian government entities enhances the facility's credibility and resource mobilisation
- **Enabling policy/regulatory environment:** the facility contributes to India's thrust towards EVs, which include supportive policies and regulations to accelerate EV adoption, infrastructure development and strengthening supply chains
- **Alignment with national goals:** the facility supports India's commitment to the EV30@30 initiative, aimed at promoting electric mobility
- **Risk mitigation strategies:** provision of second loss guarantee would reduce risks and scale up financing for EVs

3.3.4 Agriculture

YES Bank & SEWA Rann of Kutch Blended Finance Facility

YES Bank, along with SEWA Bank launched a transformative initiative to support 48,000 women salt pan farmers in the Rann of Kutch, India to switch from diesel-powered to solar-powered pumps for salt production.¹⁵⁴ These farmers, primarily from tribal and indigenous communities, historically relied on diesel-powered pumps, which led to high operational costs. The lack of formal financing options for these farmers also led to informal borrowing from money lenders at high rates of interest ranging from 36-100%. The earnings from using diesel pumps typically were about \$300-\$350 a month, perpetuating a cycle of debt and poverty

¹⁵³ [SIDBI, 2024](#)

¹⁵⁴ [Business Line, 2021](#)

among these communities. This blended finance facility, India's first ever such initiative, facilitated the transition of diesel to solar pumps, focussing on credit enhancement, accessibility and affordability.¹⁵⁵

The facility provided guarantees to cooperative banks, such as SEWA for each loan disbursed, along with an interest subvention of 8% as compared a standard 13% rate of interest, significantly lowering monthly repayment instalments for borrowers. Additionally, training was provided to intermediaries to create master trainers and develop toolkits that support efficient use of solar pumps. The pilot project facilitated access to mainstream debt finance to over 600 women salt farmers. This intervention helped break the vicious cycle of increasing debt and income inadequacy through addressing financial exclusion, but also positively impacting the health of the community while tackling climate change.¹⁵⁶

Credit enhancement	Guarantees on each loan
Credit accessibility	Interest subvention
Credit affordability	Capacity building

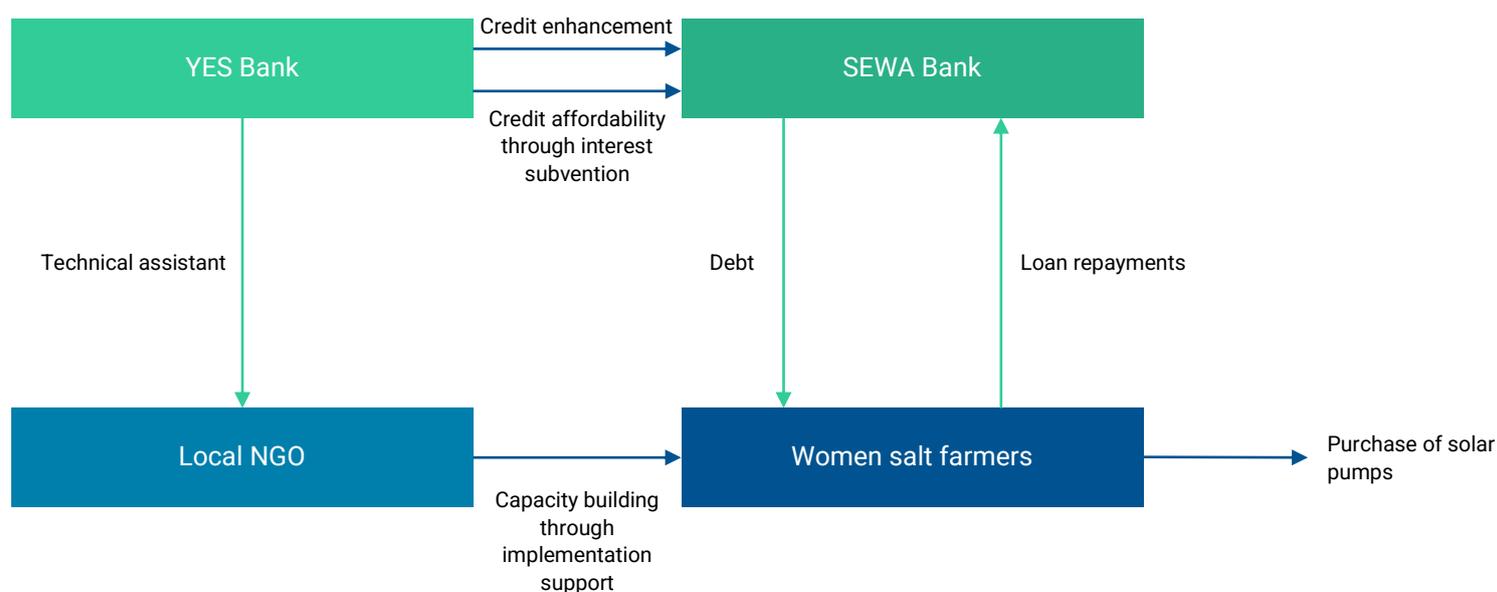


Figure 21: Yes Bank and SEWA BF Facility (structure)

Factors for success:

- **Targeted use of concessional financing:** utilising concessional financing tailored to the needs and context of women farmers, as well as to leverage private capital helps enhance project feasibility
- **Risk mitigation instruments:** the use of guarantees, first-loss capital and credit enhancement reduces perceived risks for private investors

¹⁵⁵ [UN, 2017](#)

¹⁵⁶ [UN, 2017](#)

- **Capacity building and technical assistance:** training and capacity building supports local financial institutions and farmers in enhancing their ability to manage projects effectively

Performance:

The project resulted in annual savings of 2.7 tCO2e (equivalent tonnes of carbon dioxide) from each solar pump. The incomes of participating salt farmers increased to \$830-\$850 a month, exceeding their loan repayment obligations and allowed them to build long-term income-generating assets, enhancing their overall livelihood. Higher savings were also accrued from not using diesel, even after accounting for seasonal repayment of loan for 5 years. This intervention helped break the vicious cycle of increasing debt and income inadequacy through addressing financial exclusion, but also positively impacting the health of the community while tackling climate change.

Parameters	RE	EE	EV	Agriculture
	Zimbabwe Gender-Responsive Energy Facility	China Utility-Based Energy Efficiency Blended Finance Facility (CHUEE)	World Bank & SIDBI EVOLVE Blended Finance Facility	YES Bank & SEWA Rann of Kutch Blended Finance Facility
Regulatory alignment and support	X	X	X	
Innovation in product design	X	X	X	X
Stakeholder involvement and commitments	X	X	X	X
Technological innovation		X		X
Alignment with local needs	X	X	X	X
Customisation to sector-specific needs	X	X	X	X
Vulnerable population inclusion and accessibility	X			X
Inclusion of value chain parameters		X	X	
Market readiness	X	X	X	X
Transparency and reporting standards	X	X		X

Implications for Cambodia

Blended finance is emerging as a powerful tool for enabling green investments in Cambodia. The growing openness to blended finance in the nation, coupled with successful examples in solar power and forestry sectors indicates a promising future for this financing approach.¹⁵⁷

Applicability and significance:

- **Risk mitigation:** The risk sharing mechanisms provided by blended finance can reduce investment risks, which can catalyse investments in green projects in a relatively nascent market

¹⁵⁷ P2 Landscape Report

-
- **Attract private investments:** By leveraging public and donor funds and providing risk mitigation options, blended finance can attract private capital. This was exemplified by the successful 10 MW solar plant project in the country, which combined ADB funding with private investment
 - **Sector-specific solutions:** This approach allows for tailored financial solutions to address specific challenges in different sectors. For instance, the Clean Energy Revolving Fund (CERF) provided affordable loans for clean energy technologies in Cambodia's agricultural sector
 - **Supporting nascent markets:** In emerging sectors like EV and EE, blended finance can help establish a track record and demonstrate project viability, encouraging future private investments
 - **Alignment with national goals:** Blended finance supports Cambodia's climate commitments, as seen in the REDD+ carbon credit initiative, which aligns with the country's deforestation reduction goals
 - **Bridging the financing gap:** With Cambodia facing significant investment needs for sustainable development, blended finance can help bridge the gap between available public funds and required investment
 - **Innovative financing models:** The Cambodian market can benefit from innovative blended finance structures, such as the tripartite agreement involving Chamroeun MFI, which combines liquidity provision with technical assistance and performance incentives
 - **Leveraging impact investors:** Cambodia can tap into the growing pool of impact investors interested in climate finance, as evidenced by global trends in philanthropic and impact investor contributions to blended finance initiatives

Blended finance, combined with active stakeholder coordination, have been stated as key solutions to expedite Cambodia's clean energy transition, especially to tackle the issue of lack of funding and capacity. Noting that the country will need between \$11-60 billion for energy transition by 2050, data indicates that only \$600 million has been spend so far, exacerbating the financing gaps. At such a critical time, experts noted that blended finance can be furthered along with government support on policies and incentives to enhance energy investments.¹⁵⁸

Table 12: Factors of success for the above case studies for blended finance structures and implications for Cambodia

¹⁵⁸ [Cambodianess, 2024](#)

3.4 Outcome-based financing

Outcome-based financing (OBF) instruments are innovative financial instruments that link payments to the achievement of predefined environmental or social outcomes.¹⁵⁹ These instruments are increasingly being used to finance green and sustainable projects across various sectors. OBF instruments represent a promising approach to financing green and sustainable projects, potentially increasing the effectiveness and scale of environmental investments through the incentives that it provides to project implementers to deliver results.

By transferring some performance risk to the implementing parties or investors, these tools provide risk sharing mechanisms aligning interests closely with desired outcomes. By creating potential financial returns for projects that might not otherwise generate them, OBF can attract private investment to conservation and sustainability efforts.

Successful OBF projects can attract additional investors and serve as models for replication, amplifying their impact. However, these instruments also face multiple challenges of measurement, commitment and structuring. Accurate and cost-effective measurement of outcomes can be challenging, particularly for complex environmental systems. Some environmental outcomes may take years to materialise, requiring long-term monitoring and financing structures. Careful structuring is therefore essential to appropriately allocate risk among stakeholders without deterring participation.

OBF instruments	Definition
Sustainability-linked bonds	SLBs are performance-based debt instruments where the financial characteristics can vary depending on whether the issuer achieves predefined sustainability performance targets.
Sustainability-linked loans	Similar to SLBs, SLLs are financing instruments where the borrower's financial terms, such as interest rates, are directly linked to achieving predefined sustainability performance targets (SPTs). Unlike green loans, which must finance specific green projects, SLLs are general-purpose loans and incentivize companies to improve their overall sustainability performance by offering favourable terms if the SPTs are met.
Pay-for-Performance	Pay for performance (P4P) is a compensation model where employees receive financial rewards based on meeting or exceeding measurable performance metrics. This model ties an individual's pay directly to their performance and contributions in the workplace
Environmental Impact Bonds	EIBs tie bond payments to investors to defined performance milestones. If a project underperforms, the investor is paid less, and vice versa.

Table 13: Explanation for OBF instruments

Outcome-based financing (OBF) has gained significant traction in recent years, particularly in Asia, as a tool to drive development effectiveness and achieve measurable results, due to government support, alignment with national goals and growing investor interest in sustainable projects. The surge in OBF instruments reflects growing interest from multilateral development banks, bilateral aid agencies, and national governments.

¹⁵⁹ [World Bank, 2018](#)

OBF instrument	Target sector	Amount	Issuer	Objective	Impact
SLL to ETC Group ¹⁶⁰	1. Agriculture	\$394 million	FMO (Dutch entrepreneurial development bank) and TDB (Eastern and Southern African Trade & Development Bank)	To support ETG's working capital needs across Africa, reinforcing the company's sustainability agenda and its pivotal role in the agricultural sector	1. FMO's first role as an arranger in such sustainability-linked financing, and it is the largest ever of its kind in the African agricultural sector 2. SLL aims to contribute to a more resilient and sustainable agricultural sector in Africa, reaching one million African smallholder farmers, enhancing their production and crop quality
World Bank Amazon Reforestation Outcome Bond ¹⁶¹	1.Environmental conservation	\$225 million	World Bank	To finance reforestation projects in the Amazon, aiming to restore degraded lands, enhance biodiversity, and contribute to carbon sequestration efforts	1. First bond linking investor's financial returns to the removal of carbon from the environment 2. The initiative is expected to generate carbon removal units (CRU) from reforestation projects in Amazon rainforest regions 3. \$36 million is mobilised to support reforestation activities of a Brazilian based company, Mombak
Development Bank of Rwanda SLB ¹⁶²	1. Inclusive and sustainable development 2. Women-led businesses 3. Affordable housing	\$24.8 million	Development Bank of Rwanda (BRD)	To align BRD's financial strategy with Rwanda's sustainable development goals by 1. Enhancing ESG compliance among local FIs 2. Increasing funding to women-led projects from 15% to 30% 3. Financing 13,000 affordable housing units by 2028	1. First of its kind issued by a national development bank globally and the first in East Africa 2. Innovative credit enhancement mechanism by BRD using \$10 million of IDA funds, effectively reduced the risk for investors, lowering borrowing costs 3. The IDA facility also enabled the institution to raise 3 times the amount of funding
Finland's Nutrient Environmental Impact Bond ¹⁶³	1. Environmental protection 2. Nutrient recycling 3. Water quality improvement	\$5.5 million	Centre for Economic Development, Transport and the Environment for Southwest Finland (ELY Centre)	1. To reduce nutrient loading in the Archipelago Sea area 2. To create a result-based financing model for	1. Targeted reduction of 8,500 kg of phosphorus loading per year 2. Aims to diminish eutrophication in the Baltic Sea, enhancing marine biodiversity and reducing pollution

¹⁶⁰ [ETG, 2024](#)

¹⁶¹ [World Bank, 2024](#)

¹⁶² [World Bank, 2023](#)

¹⁶³ [BSC, 2023](#)

environmental protection	3. Development of new nutrient recycling solutions and business models
3. To promote nutrient recycling and reduce the use of mineral fertilizers	4. Contribution to circular economy goals

Table 14: Examples of various OBF instruments

3.4.1 Renewable energy

Sembcorp's SGD 675 million SLB

The SLB issued by Sembcorp Industries, a leading pan-Asian energy and sustainable solutions provider, supported by IFC, ties the company's financial obligations to specific SPTs, incentivising a shift to RE solutions. Sembcorp is committed to reducing its greenhouse gas (GHG) emissions intensity to 0.40 tCO₂e/MWh by 2025. The proceeds from this SLB are directed towards increasing RE capacity, including solar, wind, and other green initiatives, further embedding sustainability in Sembcorp's operations.¹⁶⁴

If Sembcorp fails to meet its GHG emissions intensity target, it faces financial penalties, such as a step-up in the bond's coupon rate, ensuring accountability. The bond's objectives include accelerating the reduction of GHG emissions, supporting the company's strategy of increasing RE capacity, attracting ESG-focused investors and demonstrating a model for other corporates.

Factors of success:

- **Ambitious and achievable targets:** The GHG intensity reduction target is both aligned with global net-zero ambitions and achievable within the company's operational framework
- **Credible issuer:** Sembcorp's reputation and proven track record in energy solutions enhance investor confidence
- **Strong market support:** Backing from IFC adds credibility and technical expertise, increasing investor trust in the bond's integrity
- **Transparency and accountability:** Third-party verification and reporting ensure transparency and build investor trust
- **Policy and market trends:** Support from global and regional renewable energy policies strengthens demand for sustainable energy solutions

Performance:

The issuance marked the first-ever investment in an SLB by IFC globally, setting a precedent in the sustainable finance market. Sembcorp has reported advancements in RE projects, contributing to GHG reduction and renewable capacity increase. The success of this SLB has encouraged other issuers to adopt similar structures, expanding the market for sustainability-linked instruments.

3.4.2 Energy efficiency

¹⁶⁴ [IFC, 2021](#)

Tata Cleantech Capital's \$50 million SLB

This SLB issued by Tata CleanTech Capital Limited (TCCL), a joint venture between Tata Capital Limited and IFC, in 2023, represents a groundbreaking financial instrument aimed at fostering RE and EE in India. The instrument aims to support the country's clean energy transition and is the first such instrument issued by a private financial institution in India. Proceeds from the bond are earmarked for financing or refinancing projects in RE, EE, and other sustainable sectors over the next 3 years. These include deploying cleaner technologies and fostering industrial energy efficiency. By addressing gaps in green finance, the SLB supports EE projects that might otherwise lack funding, creating a ripple effect for broader adoption of sustainable solutions in India.¹⁶⁵

Aimed at promoting EE across metrics across financed projects, this instrument will contribute to India's climate commitments under the Paris Agreement and encourage the adoption of such innovative financing instruments, thereby boosting sustainable financing.

Factors for success:

- **Alignment with national goals:** The SLB supports India's EE initiatives and broader climate targets, enhancing its relevance and appeal
- **Credible issuer and backing:** TCCL's track record in clean energy financing and the IFC's involvement bolster investor confidence
- **Ambitious but realistic SPTs:** Setting clear and achievable performance targets ensures accountability and builds trust
- **Investor appeal:** The innovative nature of the SLB attracts ESG-conscious investors looking to support impactful initiatives
- **Transparency and monitoring:** Regular reporting and third-party verification maintain transparency and credibility, critical for success in the sustainable finance market

Performance:

TCCL's SLB was the first sustainability-linked bond in India focused on EE, setting a benchmark for similar instruments. Given the instrument's innovative structure, the bond has attracted strong investor interest, showcasing confidence in TCCL's ability to meet its SPTs. The success of this SLB and its impact in reducing operational costs, and emissions, encourages replication across sectors, helping scale up energy efficiency solutions in India.

3.4.3 Electric vehicles

Orient Corporation's Sustainability-Linked Loan

Orico Corporation's, a leading Japanese consumer credit company, SLL provides a compelling example of aligning corporate finance with environmental goals, particularly the promotion of EVs. It aims to encourage the adoption of EVs as part of Japan's broader efforts to achieve carbon neutrality by 2050. By tying favourable loan terms to achieving pre-determined SPTs, Orico incentivises the expansion of its EV financing programs for individuals and businesses.

¹⁶⁵ [IFC, 2023](#)

By facilitating access to EVs through loans, the SLL contributes to reducing carbon emissions in the transport sector, a major source of greenhouse gas emissions.¹⁶⁶

The instrument supports the broader EV ecosystem, including charging infrastructure development and increased consumer awareness of EV benefits. Following on its corporate responsibility, the company has integrated sustainability into its core business strategy, using its financial services to drive the adoption of low-emission vehicles.

Factors for success:

- **Clear and measurable targets:** The SPTs are specific and tied directly to the volume of EV financing, making progress measurable and actionable
- **Alignment with national priorities:** The SLL supports Japan's commitment to reducing transportation emissions as part of its decarbonisation strategy
- **Reputation and market position:** Orico's established presence in consumer credit enhances its ability to drive EV adoption effectively
- **Investor confidence:** Third-party verification of progress builds credibility and ensures adherence to sustainability goals
- **Growing EV demand:** Rising interest in EVs, driven by technological advances and environmental concerns, strengthens the loan's potential impact

Performance:

Orico has reported a significant increase in EV loans since the SLL's issuance, directly contributing to the transition to cleaner transportation, which has positioned it as a pioneer in integrating sustainability into consumer finance. The innovative approach has garnered positive attention from ESG-focused investors, enhancing Orico's market reputation.

3.4.4 Agriculture

Uzbekistan Indorama Agro's \$15 Million SLL

Asian Development Bank's SLL issued by Indorama Agro LLC, a major cotton and agriculture company in Uzbekistan, is designed to improve agricultural practices and enhance farmer livelihoods, benefiting more than 3600 farmers and farmer workers. This also provides agronomic support to advance climate resilience and sustainable farming practices. It also targets the strengthening of cotton value chains and fosters globally competitive and sustainable cotton production since the nation is a major cotton producer.¹⁶⁷

The key performance indicators of this SLL are linked to the Better Cotton Initiative (BCI) principles and improvements which include integrated and improved pest management practices along with water stewardship, biodiversity and land management and improved standards of labour and gender and social protection. Non-compliance may result in financial penalties, while successful outcomes could lead to benefits like lower borrowing costs. The progress is monitored through independent third-party evaluations to ensure transparency and accountability.

¹⁶⁶ [Orico, 2023](#)

¹⁶⁷ [ADB, 2023](#)

Factors for success:

- **Alignment with national priorities:** The SLL supports Uzbekistan’s agricultural modernisation and sustainability goals, including water conservation and fair labour practices
- **Comprehensive farmer support:** Providing farmers with training, access to inputs, and sustainable farming techniques ensures buy-in and success
- **International standards:** Certification under recognized standards i.e. BCI adds credibility and market value
- **Financial and technical support:** ADB’s financial backing and expertise in sustainability lend credibility and technical strength to the initiative
- **Monitoring and accountability:** Regular third-party evaluations ensure that SPTs are met, building stakeholder confidence

Performance:

Indorama Agro has made progress in adopting sustainable cotton production methods and improving irrigation systems, reducing water usage and enhancing soil health. The loan has helped improve the livelihoods of farmers through better working conditions, higher productivity, and access to sustainable practices. Sustainable cotton production aligns with global demand for ethically sourced products, increasing the competitiveness of Uzbekistan’s cotton industry. By tying financial incentives to measurable sustainability outcomes, it creates a win-win for Indorama Agro, local farmers, and Uzbekistan’s agricultural sector.

After having looked at the various case studies for SLLs and SLBs across various sectors, the different factors for their success for such OBF instruments can be summarised in the following table.

Parameters	RE		EE		EV		Agriculture	
	SLB Industries	Sembcorp	SLB CleanTech Capital	Tata	SLL Corporation	Orient	SLL Indorama Agro	
Regulatory alignment and support	X		X		X		X	
Innovation in product design	X		X		X		X	
Stakeholder involvement and commitments	X		X		X		X	
Technological innovation	X		X					
Alignment with local needs	X		X		X		X	
Customisation to sector-specific needs	X		X		X		X	
Vulnerable population inclusion and accessibility					X		X	
Inclusion of value chain parameters			X		X		X	
Market readiness	X		X		X		X	
Transparency and reporting standards	X		X		X		X	

Implications for Cambodia

Although, the applicability of outcome-based or performance-linked instruments is at very early stages in Cambodia, it shows promising potential. Existing regulations and programs can integrate OBF structures to ensure accountability and transparency.

Tapping existing regulatory and policy environment:

- The Cambodia Sustainable Bond Accelerator (CSBA) builds on the UNESCAP, GGGI, SERC, CGIF and GuarantCo frameworks, and aims to accelerate Cambodia's green and sustainable bond market and move from traditional bond issuances to linked issuances
- The Securities and Exchange Regulator of Cambodia (SERC) has expressed support for sustainable finance instruments, recognising their potential to attract investors while contributing to environmental causes. This regulatory backing could support the OBF market
- Recent green bond issuances like the Royal Group Phnom Penh SEZ in June worth \$10 million, marks a significant step towards sustainable finance. Supporting green projects which include a wastewater treatment plant and sustainable infrastructure, this sets a precedent for future sustainability-linked instruments under the CSBA⁹²

Applicability:

- OBF instruments like SLLs and SLBs could be particularly relevant for key sectors of Cambodia. For instance, for RE projects, performance metrics could be linked to GHG emission reduction or RE capacity additions. For EE, KPIs can include improvements in energy intensity or adoption of efficient technologies
- OBF instruments provide flexibility for issuers. Unlike traditional green bonds, SLLs and SLBs allow for general corporate purposes financing while still promoting sustainability goals, satisfying dual needs
- SLLs and SLBs provide a way to hold companies accountable for their sustainability commitments, which could be valuable for Cambodia's developing green finance market

Table 15: Factors of success for the above case studies for OBF instruments and applicability for Cambodia

D. Recommendations

After analysing sector-specific case studies and evaluating the success factors for various green finance instruments in sectors such as RE, EE, EV and agriculture, this section presents important considerations for each instrument and key factors, borrowing from the success factors identified for GFIs, to develop a robust market for GFIs in Cambodia. By addressing these considerations and implementing these success factors, Cambodia can create a conducive environment for the growth of green finance instruments, ultimately supporting its transition to a low-carbon, climate-resilient economy.

4.1 Important considerations

While thematic bonds, blended finance, funds and outcome-based instruments like SLLs and SLBs have demonstrated success in Asian contexts and have effectively reached target sectors, several key considerations must be addressed to ensure these instruments meet their intended objectives.

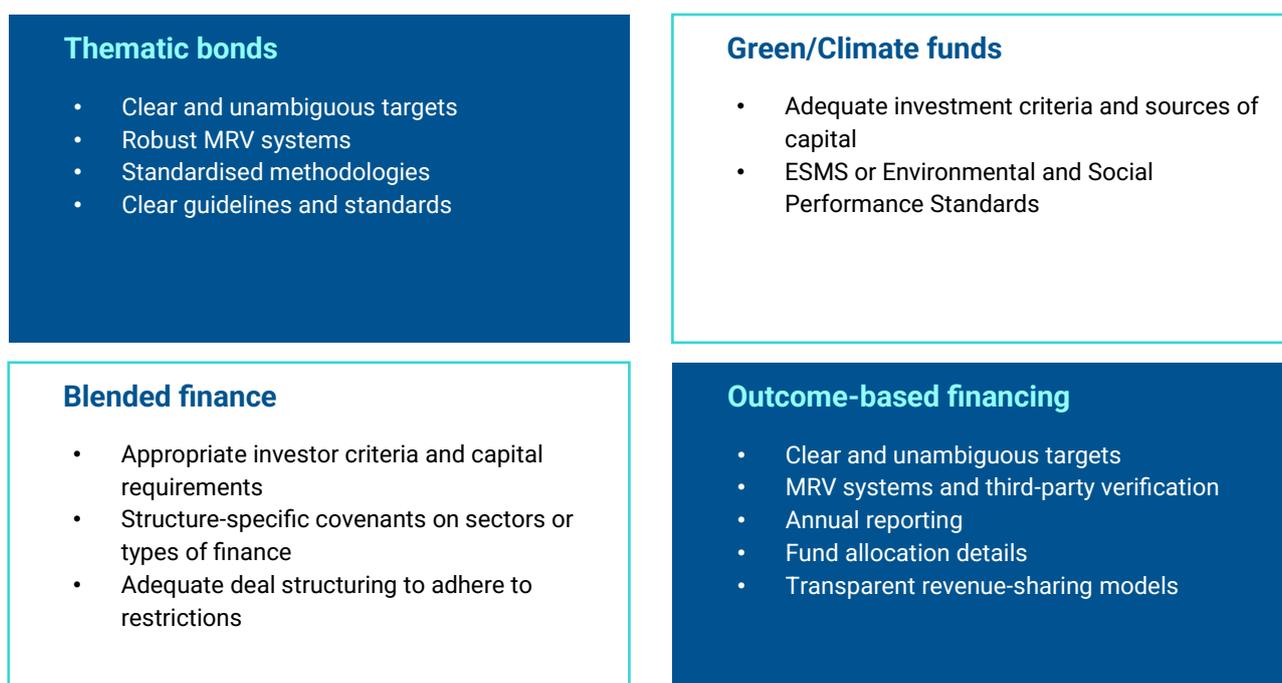


Figure 22: Key considerations for focus GFIs

1. Thematic bonds

Thematic bonds require careful consideration to ensure their effectiveness and credibility. To avoid greenwashing concerns, issuers must establish clear and ambitious sustainability targets that align with recognised and credible standards, for instance the ASEAN Green Bond Standards or the ICMA Green Bond Principles. For instance, Mufin's EV focused green bond issuance set specific financing targets for increasing 2 and 3-wheeler EV fleet in its properties.

Implementing robust monitoring, reporting and verification systems is crucial for maintaining transparency and accountability. This can be achieved by engaging third-party verifiers and

following guidelines such as the ASEAN Sustainability Bond Standards. Developing standardised methodologies for measuring environmental impacts is essential to enhance investor confidence. The Climate Bond Initiative's sector-specific criteria provide a good framework for this purpose. Additionally, promoting certification schemes like the Climate Bonds Certification can further boost credibility. Establishing clear guidelines and standards, such as the ASEAN Taxonomy for Sustainable Finance, helps create a common language for sustainable investments in the region. Fast-tracking the development of Cambodia's national green taxonomy while ensuring alignment with ASEAN standards is required.

2. Green/Climate funds

When dealing with green and climate funds, it's crucial to carefully examine investor criteria and capital sources to understand sector-specific mandates and ensure compliance preparedness. For example, the GCF has specific investment criteria that focus on climate impact potential, paradigm shift potential and sustainable development potential.

Adhering to Environmental and Social Management Systems (ESMS) or Environmental and Social Performance Standards of major institutions like the World Bank, International Finance Corporation (IFC), and ADB can significantly improve project evaluation and implementation. The ADB's Safeguard Policy Statement, for instance, provides a comprehensive framework for addressing environmental and social risks in projects across Asia. Fund managers should also consider aligning their strategies with regional initiatives such as ASEAN's Catalytic Green Finance Facility, which aims to accelerate green infrastructure investments in Southeast Asia.

3. Blended finance

Ensuring appropriate capital sources and investor criteria is paramount in blended finance structures as the origin of funds significantly impacts deployment criteria. For instance, Zimbabwe Gender-Responsive Clean Energy Facility combines public, private and philanthropic capital to support clean energy and RE projects.

When structuring deals, it's essential to study sector-specific and debt/equity-specific restrictions. For example, some investors may have limitations on financing fossil fuel-related projects or may prefer equity investments in RE. Checking for structure-specific covenants or limitations on sectors to be financed and types of finance supported is crucial. The OECD DAC Blended Finance Principles provide a useful framework for designing and implementing blended finance initiatives in Asia and beyond. Additionally, considering local regulatory environments is vital, as demonstrated by Yes Bank's successful implementation of blended finance in agriculture and clean energy sector in India.

4. Outcome-based financing

To mitigate greenwashing concerns in outcome-based financing, it's crucial to avoid ambiguous language and claims. Clear, measurable and time-bound targets are critical for success in OBF. For example, Japan's Orient Corporation's SLL are specific and tied directly to the volume of EV financing, making progress measurable and actionable. Ensuring adequate monitoring, reporting and verification systems, especially through third-party verification, is

essential to confirm compliance. This can be achieved by following guidelines such as the ASEAN Sustainable-Linked Bond Standards, which emphasise the importance of independent external review.

Providing detailed annual reports on fund allocation and environmental impacts, as well as disclosure of material developments, enhances transparency and credibility. For instance, Tata Cleantech Capital's SLB includes regular reporting and third-party verification maintaining transparency and credibility on its progress towards achieving predetermined sustainability performance targets. Implementing robust monitoring systems to track proceeds and investments ensures that performance targets are met. This can be supported by leveraging technologies such as satellite imagery and blockchain for more accurate and transparent tracking. Transparent revenue-sharing models and adherence to emerging standards, such as the ICMA's Sustainability-Linked Bond Principles, ensure fair and transparent mechanisms for all stakeholders involved in OBF projects across Asia.

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