ANNUAL REPORT 2024

BASE

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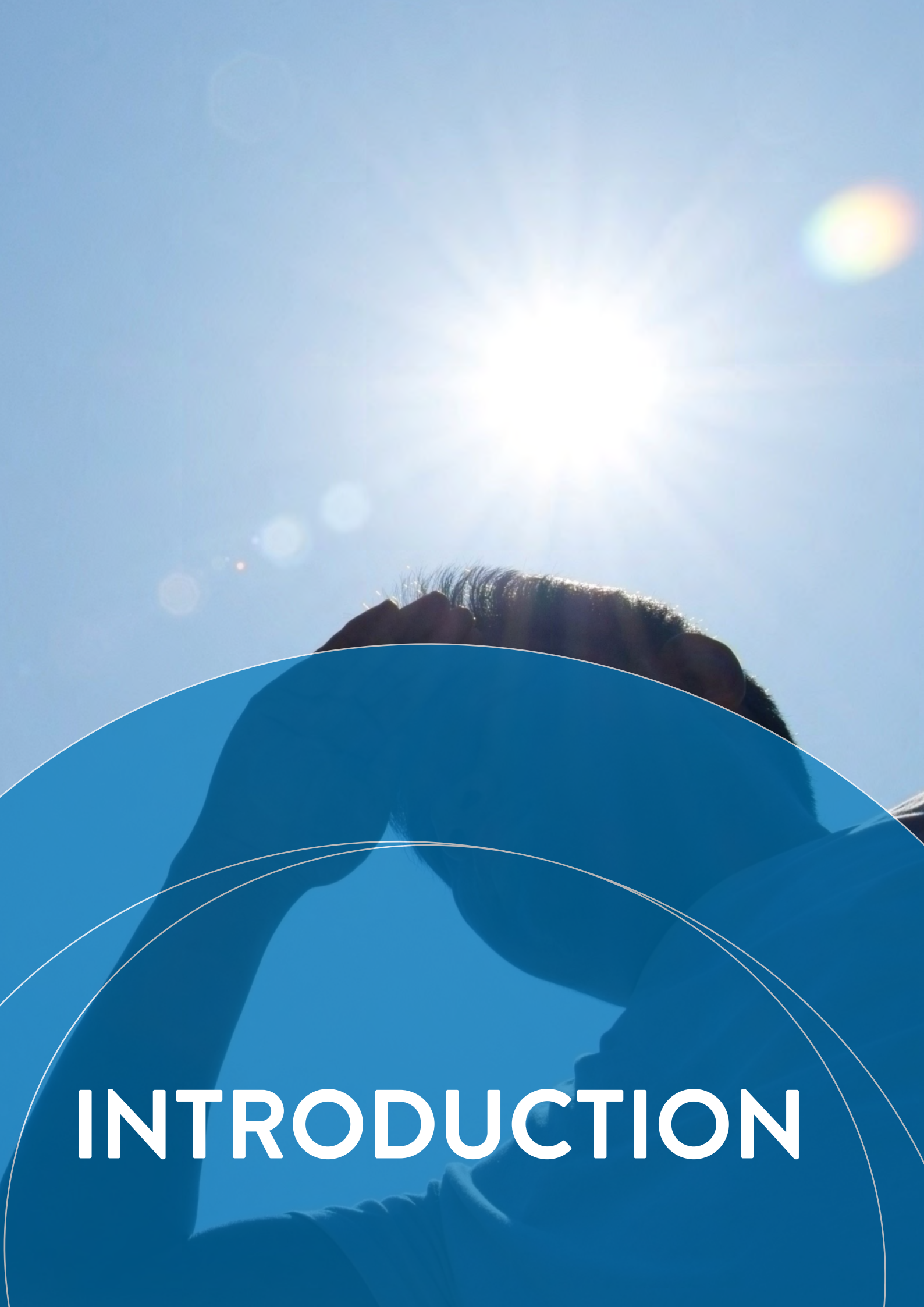
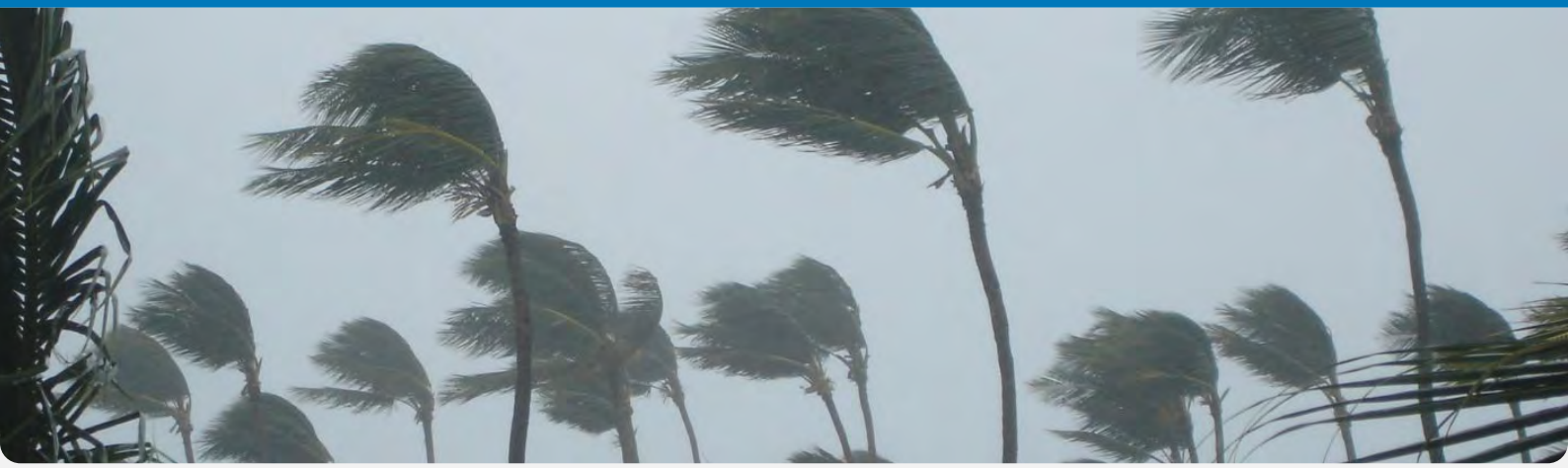


INTRODUCTION



Too late for 1.5, but every fraction of a degree matters

The State of the Global Climate 2024 report from the World Meteorological Organization (WMO) confirmed 2024 was the hottest year ever recorded. Hotter temperatures year upon year are now the pattern; no longer an anomaly. According to the Earth System Science Data latest assessment, the remaining carbon budget before reaching a global warming of 1.5 degree celsius, corresponds to roughly three years of emissions at current levels, making the Paris Agreement objective virtually unreachable.

While annual climate finance has more than doubled between 2018 and 2022, a further fivefold increase is required to reach the USD 7.4 trillion needed each year through 2030 under the 1.5°C scenario. Despite a gradual increase in funding for climate initiatives, especially in the energy, transport, building and infrastructure sectors, investments remain noticeably insufficient in industrial as well as in agriculture, forestry and other land use activities. Mobilising private capital persists as a critical challenge to bridge the funding gap, reflecting the renewed need to make the business case for climate finance.

In this direction, a core challenge lies in (re)designing climate finance solutions that, beyond effectively addressing the risks of inaction, can engage the greater number towards a just transition. Besides ethical, moral, and emotional considerations, not to mention the imperative of ensuring societal survival, addressing economic dimensions adds to the growing set of levers that can drive the systemic change humanity urgently needs.

Harnessing new economic incentives towards positive environmental outcomes with market-based mechanisms is being increasingly recognised as a promising path forward. From models encouraging efficiency and circularity to risk mitigation instruments, the expertise aggregated by BASE over the past 20 years cements the organisation's way forward in this regard.

Addressing the fundamental systemic disconnects, the rising fragmentation of initiatives and solutions among climate finance stakeholders, represents another key challenge. Aligning initiatives is critical to maximise impact and ensure balanced progress across countries and sectors. BASE actively engages in building bridges within the climate finance sector by researching the obstacles, identifying current and potential paths forward, and fostering collaboration among organisations working on existing solutions. From its small office in Basel - connected to and supported by a wide network of local consultants, partners, and donors globally - the team has, in 2024, once more deployed its efforts in various areas of climate finance.

Through a diversity of activities and collaborations with a global reach, it pursued its mission to create a paradigm shift for financing climate mitigation and adaptation solutions and generate momentum among public and private actors.

Tailoring climate finance solutions to local contexts, BASE maintained its primary emphasis on addressing the requirements of vulnerable populations. Such endeavours necessitate the deliberate integration of gender considerations, supporting for marginalised communities, and the promotion of social inclusion within all developed solutions. Through this comprehensive approach, BASE aims to establish not merely short-term fixes but rather robust and interconnected ecosystems capable of flourishing subsequent to the team's direct engagement.

This document serves as a summary of BASE's action in 2024 and as a vehicle to communicate the knowledge developed over this journey with other players in the field.

2024 Highlights

During its 23rd year of existence, BASE continued its mission of workshopping and improving innovative strategies to mobilise capital for the benefit of people, and the planet, while also proving the business case for climate action. The team worked globally to bring market-driven, actionable answers to a variety of critical challenges hampering the progress towards decarbonisation and adaptation.

BASE has brought to existence unique business and financial approaches in underserved segments of the climate solution market. With new projects and scale-ups, the organisation strived to expand its impact in its five key work areas, namely adaptation and resilience; sustainable energy; sustainable finance; sustainable transport and mobility; and knowledge sharing.

This section provides an overview of main developments, with further details and impact figures available in the Annual Report.

- The Your Virtual Cold Chain Assistant (Your VCCA) initiative significantly expanded its activities and geographical reach to continue **reinforcing cold chains in countries experiencing substantial food loss due to inadequate access to cold storage.** Alongside ongoing scale-up efforts with pilot partners in Nigeria, Your VCCA launched in Guinea Bissau and Iraq to implement Cooling-as-a-Service in solar-powered cold rooms, facilitated by digital management through the Coldtivate application. To support farming communities with cooling options beyond active cooling rooms, Your VCCA conducted training in building passive clay pot-in-pot coolers.

  To test new features in markets where Your VCCA was already active , the team developed a marketplace feature for the Coldtivate app to close the gap between farmers and consumers. To facilitate the project's replication in diverse countries, an Onboarding Toolkit was developed. This toolkit includes materials for conducting cooling feasibility assessments, developing CaaS pricing models, and initiating use of the Coldtivate app. Future iterations will feature an open-source code of Coldtivate, enabling its integration into other applications operating at the intersection of cooling and agriculture.

- BASE continued to **finetune the Energy Savings Insurance,** a flagship model encouraging the uptake of energy efficiency solutions by providing a financial protection on savings when upgrading to better performing systems. The team supported its deployment in new countries, while ensuring the transfer of knowledge related to this promising concept.

  In the last year, the ESI project in Europe managed to engage multiple key stakeholders, notably SMEs and technology providers in target countries, educating local players and planting the seed of ESI in new markets. For the first time, the idea of integrating ESI at the public procurement level, to create a guardrail for public efficiency investments, was brought to life in Mongolia, following a successful implementation that resulted in two pilot projects in the country. Concurrently, the ESI White Paper was finalised and published. This document offers a comprehensive summary of the knowledge accumulated from BASE's nine years of globally implementing the ESI model.

- Drawing upon two decades of experience, 2024 saw a concerted effort to **dedicate resources and innovative thinking to the development of financial risk mitigation mechanisms.** High perceived risks, low returns, and extended payback periods are commonly identified as significant barriers to investment in climate and nature-related projects, notwithstanding their demonstrated positive financial performance. Consequently, developing solutions that reduce this perceived risk and enhance returns is increasingly recognised as having substantial potential to catalyse financing for sustainability initiatives.

  In this context, BASE successfully supported the design of a guarantee in Peru. This initiative aims to protect green lending to Small and Medium-sized Enterprises (SMEs) and has successfully generated a fund of USD 35 million. In Kazakhstan, BASE proposed a Green Construction Completion Guarantee, a risk mitigation facility designed to shield buyers or investors from failures in building completion or in meeting energy efficiency targets.

- Building on this expertise, significant efforts were dedicated to **conceptualising a new philanthropic guarantee.** This guarantee would facilitate the installation of solar panels in humanitarian settings. In collaboration with UNITAR's Global Platform for Action on Sustainable Energy in Displacement Settings (GPA), this mechanism would collect pledges from philanthropies to cover the risks associated with the early closure of refugee camps for long-term solar-as-a-service agreements. Leveraging this momentum, BASE and GPA co-hosted a side-event at Building Bridges 2024. The event focused on the potential of guarantees, highlighting pioneering projects, their impact, and best practices.

- BASE continued the **design and structuring of climate finance projects and programmes, including for GCF and GEF.** Following previous projects - like the **Ecobank Ghana project approval by the Green Climate Fund at their 28th board meeting** and the Green Climate Fund (GCF) submission of the UNDP-led Solar for Health Project, BASE continued to bring in its expertise in climate finance through project development and structuring for Accredited Entities, such as the Cedar Oxygen-led LGIF project or the UNEP-led Methane Programme.

- 2024 marked a significant step forward for BASE's **engagement in sustainable finance and banking.** To address the lack of clarity around green investments, BASE developed its first Green Taxonomy for the private banking sector, in collaboration with Asobanca in Ecuador. Similar classification systems were also co-developed in four Latin American countries, supported by a comprehensive training programme to help financial institutions identify and evaluate circular investment opportunities.

  In parallel, BASE was selected by IDB Invest to lead the development of a Circular Economy Financing Strategy for the Circularity Latam Fund, spanning Colombia, Costa Rica, Panama, and Mexico. This work involves creating a taxonomy with KPIs and impact metrics, standardising reporting, and integrating a just transition lens. On top of that, BASE pursued its work advising banks on their sustainability strategies, as it supported the development of a net zero and decarbonisation strategy for Banco Galicia in Argentina, and similarly supported Bancoldex, Davivienda and Primus Capital.

- After officially **joining the NDC Partnership**, a global coalition supporting countries in achieving their climate goals, BASE **commenced its inaugural project under the NDC partnership in 2024**, providing support to the Government of Lebanon in preparing a Funding Proposal for the GCF. The initiative, known as the Lebanon Green Investment Facility, aims to enable Lebanon to achieve its NDC through private sector investment and a blended finance approach.

- **Servitisation continued to gain momentum as a powerful tool for advancing sustainable energy in 2024.** As part of a project with the Circular Building Coalition (CBC), the SET Alliance developed a white paper exploring how Product-as-a-Service (PaaS) models can enable circularity in building energy systems. The paper also proposed ways to embed circular principles directly into contractual frameworks to ensure circularity can be achieved in practice.

  To promote innovation in this space, the SET Alliance also launched the first edition of the Efficiency-as-a-Service (EaaS) Innovation Showcase Award, celebrating pioneers of servitisation. Key case studies and a report assessing the status of EaaS model

deployment in Europe were also released by the EaaS Initiative, offering actionable insights and best practices. Meanwhile, the Servetia project supported Nexans and Swiss hospitals in retrofitting their facilities using energy-as-a-service models, providing technical advice and helping design replicable solutions.

- 2024 also saw BASE **expand its work on e-mobility.** In line with its long-standing commitment to scaling electric public transport, BASE also provided support to the Ghanaian Ministry of Transport, assisting in the design of a financing strategy for the adoption of electric buses and setting up an e-mobility Policy Working Group.

To foster global knowledge exchange, the team hosted the second edition of its "Driving the Change: Accelerating Public Transport's Transition to E-Buses" webinar series. This series highlighted successful case studies and key financing components, aiming to assist cities in overcoming adoption barriers and accelerating their transition to electric public transport.

OVERVIEW OF BASE'S PROJECTS IN 2024

FOREWORD

Ousseynou Nakoulima

Member of BASE Foundation's Board

"Joining BASE as a board member is a fantastic way to contribute to the advancement of the sustainability space. Building on over two decades of innovation, BASE is expanding into new areas and frontier markets. This work is ever more relevant today given the scarcity of public funding and the need to mobilise and catalyse private investments to reinforce the resilience of communities to extreme weather events as well as provide access to clean energy and develop efficient mobility systems. The knowledge generated by BASE is crucial to tackle the challenges we are facing today in these areas through the dissemination of innovative solutions and best practices."

WHO WE ARE

Our Mission

Established in 2001, BASE is a Swiss not-for-profit foundation and a Specialised Partner of the United Nations Environment Programme.

Our core mission centres on developing innovative and actionable financial strategies and market-driven solutions aimed at unlocking investments in climate change solutions. We operate globally, working across all markets and segments, including those that are typically considered challenging and underserved. Our expertise lies in addressing climate change through innovative and practical financial mechanisms.

Our vision

At BASE, we work towards building an environmentally conscious and resilient world, where sustainability becomes an inherent part of how businesses and markets operate. By facilitating the adoption of climate change solutions, we aspire to drive positive change and contribute to building a better future for our planet and future generations.

Our values

Integrity and commitment

Our work at BASE is powered by our passion and commitment on climate action for the common good. We deliver long-lasting impact through iterative innovation and continuous learning from feedback, and by building trustworthy relationships within the team and with our partners.

People-centric and Diversity

At BASE, open hearts and minds come together. We embrace diversity, recognising that it is key to fostering an inclusive and fun working environment where every individual feels valued, resilient, and empowered to contribute their unique perspectives and talents for our collective growth.

Co-creation

Our solutions are born from collective creativity. We nurture connections, exchange, and collaborations between different segments of society to improve our solutions and pass the learnings forward.

LEARN MORE ABOUT BASE →

Our team

Our board

GINA DOMANIG

President of the Foundation Board

Managing Partner, Emerald Technology Ventures

ERIC USHER

Member of the Foundation Board

Head, UN Environment Programme Finance Initiative

MAXINE GHAVI

Member of Foundation Board

Executive Vice President & Head of Europe Chief DEI Officer, Energy Sector, Hitachi Energy

OUSSEYNOU NAKOULIMA

Member of the Foundation Board

Director at IFC - International Finance Corporation

MEET THE TEAM →

OUR PROJECTS

01

AREA OF WORK

ADAPTATION AND RESILIENCE

BASE

YOUR VIRTUAL COLD CHAIN ASSISTANT

Setting The Context

Agriculture is vital to the economies of many developing countries, with smallholder farmers, who make up the vast majority of the agricultural workforce, depending on it for their livelihoods. However, 30 to 40 percent of produce is lost post-harvest due to weak cold chain infrastructure, compounded by issues like limited energy access, maintenance challenges, financing barriers, and lack of technical knowledge.

To tackle the pressing challenge of post-harvest losses and improve farmer livelihoods, BASE and **Empa** launched **Your Virtual Cold Chain Assistant (Your VCCA)** in 2021. The initiative introduces sustainable, smart cooling solutions, initially piloted in India under **Data.Org's Inclusive Growth and Recovery Challenge**, and later expanded to Nigeria with the support of **GIZ**.

At the core of the initiative is the implementation of the **Cooling-as-a-Service (CaaS)** model, which enables smallholder farmers to access solar-powered cold rooms through a flexible, pay-per-use approach. The CaaS model is implemented through two primary pathways. In regions where a cooling ecosystem already exists, the initiative partners with local cooling companies to expand services. In countries where the cooling ecosystem is either absent or still emerging, Your VCCA provides support for the procurement and installation of cold rooms, as well as the design of tailored management and governance frameworks to ensure their effective and sustainable operation.

The implementation of the CaaS model is facilitated by **Coldtivate**, a mobile application developed as part of the initiative. The application supports inventory management, monitors the shelf-life of produce in storage, tracks project impact, and provides market price forecasts. These features enhance the operational efficiency of cooling providers and enable farmers to make informed decisions regarding the optimal timing for selling their crops.

To ensure everyone benefits and the impact is far-reaching, the initiative weaves in **gender-sensitive training** that boost awareness and strengthen cold chain practices among a wide range of users, from farmers and vendors to cooperatives and women's self-help groups. The project also partners closely with cooling companies, offering tailored support to adapt the CaaS model and pricing to local realities, balanc-

PERIOD

2021-2025

COUNTRIES

India, Guinea-Bissau, Nigeria, Iraq

PARTNERS

Empa

FUNDERS

data.org, Climate Ledger Initiative, German Development Cooperation (GIZ), ECOWAS, REPIC, Climateworks Foundation, Airwell

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

494 farmers (who have at least 1 crate checked-in in Coldtivate), among which 29% are women, across 38 cold rooms managed with CaaS and Coldtivate by 10 different cooling companies.

CO_2E EMISSIONS REDUCTION

251 tCO_2e/year (from reduced crop spoilage and storage in solar-powered units for 1 year, based on LCA analysis).

ENERGY SAVINGS

75022 kWh/year (from replacing fossil fuels with solar power for 38 rooms for 1 year).

FOOD LOSS EVOLUTION

-61.8% food loss (before / after using cold storage).

AVERAGE INCREASE IN EARNINGS FROM CROP SALES

+43,7% farmers revenue (before / after using cold storage).

REACH OF CAPACITY BUILDING ACTIVITIES

3878 people (34.4% women).

VISIT NIGERIA PAGE

ing sustainability with fair costs for farmers. The cold rooms are owned and operated by these partner companies, which also undertake the recruitment and training of local youth and women to oversee daily operations, thereby generating stable employment opportunities and contributing to income diversification across both rural and urban settings. Meanwhile, cooling users can access the cold rooms without any upfront investment, paying only for the quantity of fruits and vegetables they store each day.

Despite the clear benefits of cooling, many smallholder farmers remain hesitant to use cold rooms consistently. Cooling companies often cite weak market linkages and uncertainty around profitability as key barriers to regular use. However, consistent utilisation is essential for the long-term sustainability of these units. Each solar-powered cold room requires a significant upfront investment (approximately USD 30,000 for a 5 MT facility) and steady usage is critical to ensure financial viability over time.

To address this, it is vital to assess local cooling demand before installation. Strategically locating units in areas with strong, reliable demand not only enables cooling companies to recover investments and scale operations effectively, but also contributes to the initiative's broader goals. High occupancy allows farmers to extend the shelf life of their produce, access better market opportunities, and ultimately strengthen food systems and rural livelihoods.

Your VCCA hosts an open day at LeapEnergy's cold room in Warri, Nigeria, giving farmers a live demo of the Coldtivate app.

Review of 2024

In 2024, Your VCCA activities expanded to new countries beyond India and Nigeria, and focused on tackling the challenges of market linkage, scalability, and replication. Below we present a brief overview of the four projects that have been launched in the past year.

TAILORING YOUR VIRTUAL COLD CHAIN ASSISTANT TO WEST AFRICA

The Your VCCA project in Guinea-Bissau, started in February 2024, supports economic and social stabilisation measures implemented by **ECOWAS** by integrating sustainable cold storage into local fruit and vegetable value chains. Initial efforts focused on a **feasibility assessment** to understand the cooling needs of farming communities across the regions of Gabu, Bafata, Quinara, and Bolama. A survey of 20 farming communities in the target regions revealed average post-harvest losses of 40 percent in fruits and vegetables.

The assessment also identified preferred cold storage locations and examined market access, transport modes, and travel times. It highlighted key barriers such as unreliable grid electricity, the high cost of off-grid cooling, and the seasonal nature of crop production. These insights informed the project's next phase, which focused on deploying context-specific cooling solutions in partnership with local organisations.

To this end, the project initiated the procurement and installation of four decentralised cold storage units, combining containerised solutions with retrofitting of existing structures. A crucial component of the project is the establishment of a governance structure to ensure efficient room operations and long-term sustainability: Cold rooms will operate under a CaaS model and will be equipped with sensors connected to the Coldtivate app to monitor conditions and optimise usage.

Four local NGOs were selected to manage the units in each region: ADA, AMAE, Para Ka Tem, and OGD. They will be supported by microentrepreneurs selected among the local youth, who will take up roles of cold room operators and market linkage managers.

Complementing the active cooling infrastructure, the project conducted training on passive cooling solutions, such as clay-pot coolers, which are affordable and scalable at the farm level.

VISIT GUINEA-BISSAU PAGE

A training-of-trainers approach was adopted, enabling local supervisors to disseminate knowledge and support wider adoption among farmers. These efforts help build awareness around cooling benefits and strengthen the cold chain from farm to market.

Looking ahead, following room installation and commissioning in June 2025, the project will focus on launching cold room operations, complete shelf-life experiments to quantify cooling benefits on local crops, and monitor pilot performance and impact with the help of the Coldtivate app.

SMART COOL MARKETS BY YOUR VCCA

Launched in May 2024 with support from the Swiss development platform **REPIC**, the project builds on the Your VCCA initiative by introducing the *Smart Cool Markets* feature in the Coldtivate app to help Nigerian smallholder farmers sell cold-stored produce directly to consumers and retailers. By transforming cold rooms into aggregation centers and enabling digital marketplace access, the initiative addresses key barriers, such as lack of guaranteed buyers, limited awareness of cooling benefits, and poor bargaining power, that often force farmers to sell immediately at low prices.

The first project phase focused on integrating a digital marketplace in the Coldtivate app. Here, farmers can list and track their produce, while buyers can view availability and remaining crop quality, and purchase produce directly. Digital transactions and visibility on the crop shelf-life create a transparent, efficient seller-buyer relationship. Smallholder farmers without smartphones can also participate in the marketplace with the help of cold room operators.

In parallel, capacity-building activities were rolled out. Training Leads were hired in collaboration with cooling companies **ColdHubs** and **Leap Energy** to conduct workshops with farmers, traders, and cold room staff. These sessions introduced the marketplace feature, explained its benefits, and provided guidance on digital sales. Six workshops were conducted, reaching 317 participants, 33 percent of whom were women. Particular effort was made to ensure female participation, with Saturday workshops proving effective for market-active women, especially in the most rural communities.

The next steps will focus primarily on deploying the marketplace feature at 9 pilot sites in collaboration with ColdHubs and LeapEnergy, expanding training, and collecting evidence on the marketplace's economic impact on sellers and cold room operations.

Your VCCA and ColdHubs teams during a visit to the cold room and Bodija Market in Ibadan, Nigeria.

VISIT SMART COOL MARKETS PAGE

YOUR VCCA ONBOARDING KIT AND OPEN-SOURCE CODE

In 2024, with support from the ClimateWorks Foundation, BASE launched the *Your VCCA Onboarding Kit*, a comprehensive, open-access package designed to accelerate the global deployment of solar-powered cold storage in agriculture. Building on the Your VCCA initiative, the project focuses on enabling small-scale cooling providers to adopt the CaaS model and digital cold room management via the Coldtivate app.

The **toolkit**, which was launched in May 2025, addresses four key barriers to scaling decentralised cooling:

1. Lack of clear operational and pricing guidance for the CaaS model
2. Challenges in managing multi-commodity cold rooms
3. Limited user capacity
4. The absence of digital tools.

It provides practical resources including feasibility assessment tools, customisable pricing models, training guides for cold room operators, and detailed walkthroughs of the Coldtivate app's features. Formats of material include videos, presentations, downloadable documents and comics for accessibility across diverse user groups.

Visiting Toby, a tomato farmer in Nigeria, to understand his post-harvest process from field to cold room.

In parallel, Coldtivate's codebase and documentation are being prepared for open-source release, to enable cooling implementers and software companies interested in deploying their own version of the application to independently work on the codebase. This workstream is especially relevant for actors who would like to integrate existing digital solutions with the Coldtivate app, and an incubator program to support early adopters is scheduled for summer 2025.

By lowering the barriers to entry and empowering local actors, the Your VCCA Onboarding Kit supports inclusive, low-carbon food systems and scalable climate adaptation in the agricultural sector.

DEPLOYING PAY-AS-YOU-STORE AND YOUR VCCA IN IRAQ

Having developed an end-to-end solution, encompassing feasibility studies, business modeling, digital cold room management, and training, Your VCCA is now increasingly focused on piloting the full scope of its projects in new countries. These are regions where establishing a cold room ecosystem in the agricultural sector has proven challenging and demands more targeted support.

In 2024, BASE partnered with **Airwell** to pilot a solar-powered cold room in Nineveh (Mosul), Iraq, as part of the Your VCCA initiative. Our team provided technical assistance to Airwell and partners to tailor the CaaS model to a new context, enabling users to store their produce on a pay-per-use basis without upfront capital investment.

To support cold room operations, we deployed the Coldtivate mobile app, fully translated into Arabic and integrated with Victron Energy sensors for real-time temperature monitoring. This integration enables the calculation of *Time-To-Pick-Up*, an estimate of each crate's remaining shelf-life that helps users plan sales and logistics more effectively.

The implementation is supported on the ground by **Triangle Génération Humanitaire (TGH),** a local NGO responsible for training and community engagement. The cold room will serve as a local hub for fresh produce storage and aggregation, helping connect small-scale producers with nearby markets.

The pilot, running through July 2025, will inform the potential scale-up of solar-powered cold rooms in the region. This initiative represents a first step toward strengthening cold chain infrastructure in Iraq using clean energy and digital tools tailored to local needs.

VISIT ONBOARDING KIT PAGE

Future of the project

Looking ahead, the Your VCCA initiative plans to deepen its impact by strengthening data collection, testing long-term sustainability, and evaluating scalability across new regions and contexts.

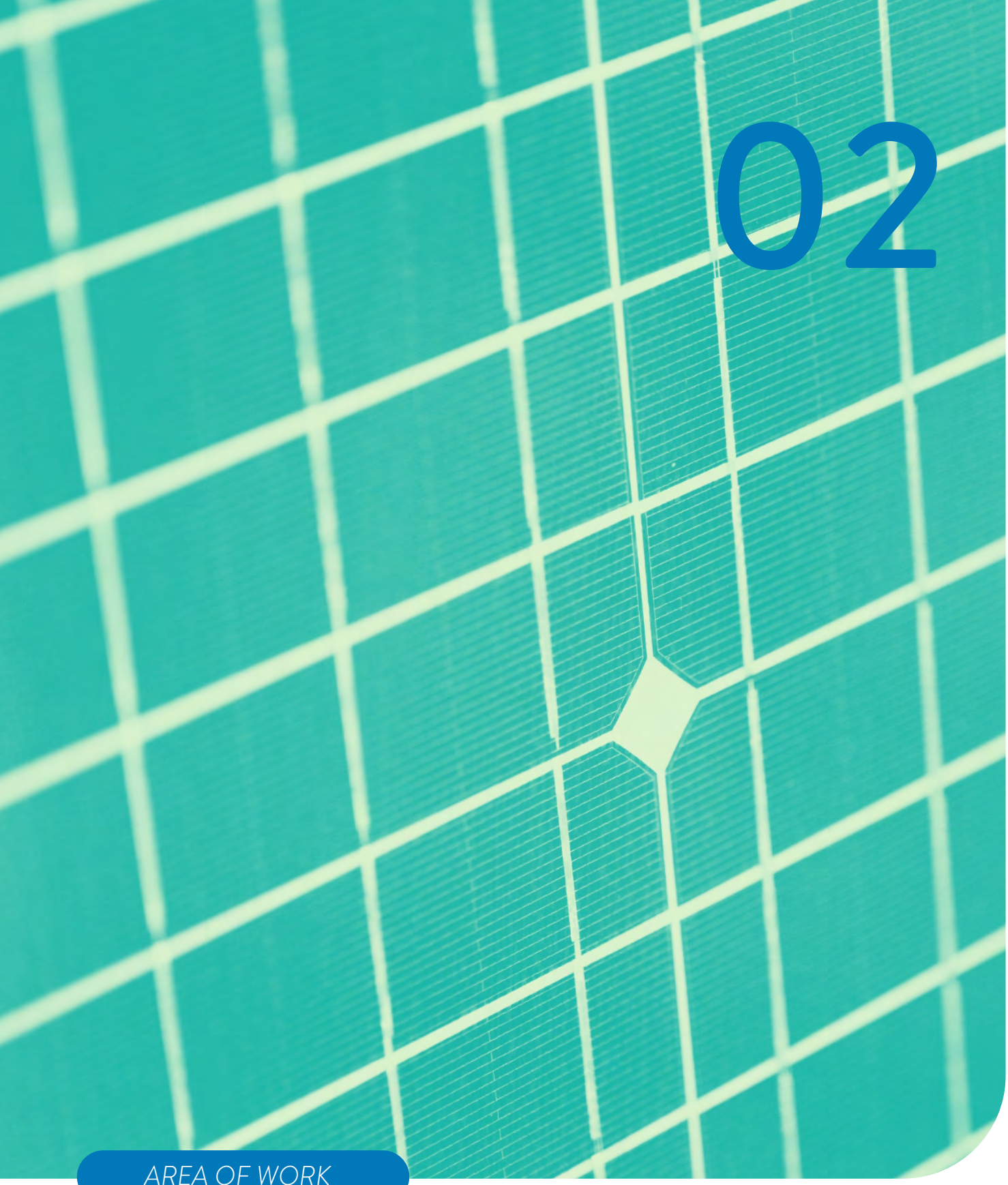
A central priority is to gather more granular impact data to better understand how cooling access and digital tools affect farmers' incomes, postharvest losses, and the viability of cooling businesses. With Coldtivate now integrated into cold rooms across multiple pilot sites, real-time data on room usage, produce quality, and market transactions will provide crucial insights into behavioural patterns, barriers to adoption, and operational bottlenecks. This evidence base will guide future refinements to both the technology and the business model.

Another key focus will be testing the operational sustainability of the Coldtivate app and the CaaS model as they are transitioned into the hands of incubator companies and cooling providers. This step is critical to ensure that the Your VCCA ecosystem can scale without dependency on BASE and Empa, while maintaining quality and impact.

Equally important is testing the digital marketplace feature at scale. With pilots underway across Nigeria, the team will monitor how digital marketplace access improves sales outcomes for farmers and occupancy rates for cooling providers. Designed for flexibility, the marketplace feature is built to be easily deployed in other countries where Your VCCA operates. Future expansions to additional regions -such as Guinea-Bissau and Iraq- will be explored, helping to connect smallholder farmers with local buyers through a simple, transparent, and tech-enabled platform. If successful, this model could significantly enhance cold room profitability and farmer participation, two critical drivers for sustainable scale.

By focusing on real-world feedback, open innovation, and targeted support to early adopters, the Your VCCA project is well-positioned to transition from pilot to platform, offering a scalable, climate-friendly solution to postharvest loss and rural economic resilience.

Visiting Buba Market in Guinea-Bissau to explore the farm-to-market journey and assess demand and ideal location for a cold room.



02

AREA OF WORK

SUSTAINABLE ENERGY

AREA OF WORK:

SUSTAINABLE ENERGY

2.1 INNOVATIVE BUSINESS MODELS

PROJECTS:

A) *ENERGY SAVINGS INSURANCE (ESI)*

ESI EUROPE 2.0
ESI STUDY IN PUBLIC PROCUREMENT IN MONGOLIA

B) *SUSTAINABLE ENERGY-AS-A-SERVICE*

SERVETIA
SERVITISATION FOR ENERGY TRANSITION (SET) ALLIANCE

I) THE ENERGY SAVINGS INSURANCE (ESI)

About ESI

At an individual level, small businesses' energy consumption seems relatively negligible compared to larger industries. However, at an aggregate level, promoting energy efficiency improvements in SMEs globally can be greatly significant as they represent **90 percent of businesses worldwide**. To increase adoption of efficient energy systems, SMEs still need to overcome a plethora of challenges, such as higher upfront costs, competing investment opportunities, and low trust in energy-savings promises that hold them back from prioritising energy efficiency considerations in their operations.

The ESI model was created to increase SMEs' trust in energy-efficieny investments, de-risking them via, notably, an energy savings guarantee. Consequently, the model also alleviates financial institutions' risk when funding energy-efficiency projects, as ESI projects grant the user of the insured equipment an added protection. The ESI model is adaptable and scalable to market and technologies presenting interest and energy savings potential, and as a fully market-driven model, does not require additional non-debt financing such as grants or subsidies.

The idea of the Energy Savings Insurance (ESI) model was firstly shaped by BASE and set into motion with the **Inter-American Development Bank (IDB)** in Colombia and Mexico. After raising interest among stakeholders in other parts of the region, the ESI model was brought to El Salvador, Nicaragua, Brazil, Peru, Chile, Argentina, and Paraguay.

Following its success in Latin America, the ESI model made its way to Europe in 2018 and 2021 in 6 countries as part of two projects. Over the past two years, projects bringing the model to Mongolia and Morocco have been conducted. Currently, the implementation of ESI is expanding to Southeast Asia.

BASE

SUSTAINABLE ENERGY

INNOVATIVE BUSINESS MODELS

ESI EUROPE 2.0

VISIT PROJECT PAGE →

Setting the Context

Despite the pressing need to accelerate energy efficiency (EE) investments across Europe, small and medium-sized enterprises (SMEs) often face high perceived risks that deter them from upgrading to more efficient technologies. These risks (performance uncertainty, limited access to tailored financial products, and the complexity of EE investments) remain a key bottleneck in reaching EU climate goals, including those outlined in the **European Green Deal** and the updated **Energy Efficiency Directive (2023/1791)**. The ESI Europe 2.0 project directly addressed these barriers by advancing the Energy Savings Insurance (ESI) to facilitate risk-mitigated EE investments in three pilot countries - Croatia, Greece, and Slovakia.

Review of 2024

Throughout 2024, the project significantly advanced the operationalisation of the ESI model. Building on foundational work from 2023, the focus centred primarily on stakeholder engagement, working closely with SMEs, technology providers, financial institutions, and insurers, while continuing to support the efforts in adapting the model to the different markets and the refinement of the risk-mitigation instruments.

Led by **BASE**, in collaboration with national partners DOOR (Croatia), CRES (Greece), and SIEA (Slovakia), the consortium signed 17 Memoranda of Understanding (MoUs) with Technology Providers (TPs) and Financial Institutions (FIs). These agreements supported a pipeline of 18 energy efficiency investment projects, in which the potential application of the GoSafe with ESI model was analysed, representing a combined investment volume of approximately EUR 1.9 million.

Capacity building remained a strategic priority. More than 700 stakeholders - including SMEs, technology providers, and financial sector representatives - participated in tailored webinars, in-person workshops, events and bilateral engagements. This outreach enhanced market understanding of the ESI model and enabled practical application at country level.

Through the **GoSafe with ESI** brand, the team conducted wide-reaching marketing activities to promote the model among local target audiences. Online advertising and press releases represented two of the main strat-

PERIOD

2021-2024

COUNTRIES

Croatia, Greece and Slovakia

PARTNERS

Door, CRES, SIEA

FUNDER

European Commission Horizon 2020 Programme

ACHIEVED IMPACT

NUMBER OF ORGANISATIONS ENGAGED

17 Memorandum of Understandings signed with target Technology Providers and Financial Institutions.

PILOTS (POTENTIAL)

18 projects analysed for ESI application, with a combined investment volume of approx. EUR 1.9 million.

REACH OF CAPACITY BUILDING ACTIVITIES

442 individuals in Croatia (83), Greece (129) and Slovakia (230) from TPs, SMEs, FIs and insurance sectors through in-person and online sessions.

AMPLIFICATION REACH

Approximately 1'000 individuals have been reached through the dissemination activities through conferences from the ESI Europe 2.0 project, approximately 815 in person and other 185 online. 104 social media posts reached around 35'200 people.

egies to generate interest into the ESI model, engage SMEs and technology providers, and create a pipeline of pilot projects. Besides these communication efforts, aimed at raising general awareness about the model, local consultants were hired locally, providing a more personal and effective approach to these stakeholders.

Among public institutions, strategic efforts also expanded the project's footprint, with appearances at high-level events hosted by **DG Regio** (Slovakia), the **International Energy Agency (IEA)** (Greece), and the **Organisation for Economic Co-operation and Development (OECD)** (Croatia). Additionally, articles were featured in *European Energy Innovation* and other European media outlets, reinforcing the model's alignment with broader climate finance conversations in each pilot country.

Noteworthy tools and outputs developed in 2024 included:

- A digital CO_2 emissions calculator for SMEs
- A set of standardised ESI contract templates
- A public dashboard to monitor ESI project status and pipeline metrics

The macroeconomic landscape posed several challenges. Persistent inflation and volatile energy prices reduced SMEs' risk appetite, while existing public subsidy programmes in some countries dulled the perceived added value of insurance-backed mechanisms. The project responded by adapting outreach tactics, providing hands-on technical support, and streamlining validation and insurance workflows to increase model accessibility.

Future of the project

With implementation concluding in December 2024, ESI Europe 2.0 is transitioning its outputs to long-term replication. All knowledge assets, including the CO_2 calculator, contract templates, and validation protocols, are now fully available for use and adaptation by other EU actors, financial institutions, and project developers.

Stakeholder engagement can continue beyond the grant period, with consortium partners actively engaged after project closure to offer technical assistance and guidance for initiatives that are still open for evaluation. BASE is also exploring synergies with parallel EU-funded initiatives. The ESI model's compatibility with existing subsidy schemes makes it a valuable complement to national EE programmes.

Sustaining the model's momentum now depends on how actively the market chooses to adopt and integrate the ESI elements that are already available. Continued engagement from banks and technology providers will be essential to support SMEs seeking practical and low-risk pathways to improve energy performance through these ready-to-use tools.

While the implementation of energy savings insurance is still in the exploratory phase across the three countries, the project has successfully demonstrated the technical, legal, and financial readiness of the model for future application. Preliminary assessments indicate promising energy efficiency and emissions reduction potential, which will be validated through continued stakeholder engagement and pilot follow-up.

The ESI Europe team annual meeting in March 2024, Basel, Switzerland.

SUSTAINABLE ENERGY

INNOVATIVE BUSINESS MODELS

ESI STUDY IN PUBLIC PROCUREMENT IN MONGOLIA

Setting the Context

Public procurement in Mongolia remains predominantly guided by the principle of awarding contracts to the lowest upfront bidder, with limited regard for long-term operating costs. This poses a particular challenge when procuring energy-consuming equipment - such as lighting systems, boilers, and HVAC units - whose lifecycle energy and maintenance expenses often far exceed the initial purchase price. Although Mongolia has introduced some new green public procurement guidelines, its application in practice is limited.

This results in the continued acquisition of inefficient technologies, placing additional strain on public budgets and undermining the country's energy and climate commitments. With an **energy intensity high above the global average**, aligning public procurement with COP28 goals, the SDGs, and Mongolia's Vision 2050 requires targeted, practical tools that enable public buyers to prioritise energy efficiency and operational cost savings. Equipping procurement authorities to effectively compare OPEX against CAPEX and apply energy performance criteria is therefore critical to advancing a just and low-carbon transition.

Review of 2024

The Energy Savings Insurance (ESI) Mongolia Public Procurement project was designed to explore how the ESI model could be adapted to support government purchasing decisions. The 2024 focus was on conducting a legal and institutional review to assess how energy efficiency considerations could be formally embedded in public tendering processes.

This included recommendations for a guarantee-backed, performance-based procurement mechanism, where technology providers commit to delivering energy savings, independent entities verify performance, and insurers manage underperformance risk, supported by international reinsurance.

PERIOD

2024

COUNTRIES

Mongolia

PARTNERS

Ministry of Finance; Ministry of Energy; Energy Regulatory Commission; Tenger Insurance; XacBank

FUNDER

UNEP

ACHIEVED IMPACT

TOOLS OR RESOURCES CREATED

A comprehensive Legal Guideline for ESI Integration into Public Procurement was developed, providing a practical framework to support performance-based procurement of energy-efficient equipment in large public institutions.

REACH OF CAPACITY BUILDING ACTIVITIES

More than 25 public officials participated in the NDC Action Validation Workshop on 20 June 2024, actively contributing to the alignment of the ESI model with Mongolia's updated national climate targets.

Key milestones in 2024:

- Legal and policy integration: BASE developed a comprehensive guideline outlining how ESI provisions could be incorporated into the revised Procurement Law. The guideline includes model clauses for energy performance guarantees, lifetime-cost evaluations, and enforcement mechanisms.
- Stakeholder engagement: On 20 June 2024, BASE participated remotely in the NDC Action Validation Workshop hosted by the **Ministry of Environment and Tourism**, where over 25 representatives from key ministries (including environment, agriculture, labour, and energy) discussed the alignment of the ESI model with Mongolia's updated national climate commitments.

Future of the project

With the foundational legal analysis in place, Mongolia is well-positioned to further explore the practical application of the ESI model through a targeted pilot.

This could take the form of an energy efficiency upgrade project within a public entity, particularly among high-consumption institutions known locally as *Designated Consumers*.

The 2024 study provides a robust analytical base to support such an initiative. A suitable pilot, still to be formally identified, may be selected in collaboration with the **Energy Regulatory Commission (ERC)**, which is leading the charge on integrating performance-based procurement approaches.

BASE remains committed to supporting this next phase, offering technical expertise to help operationalise the ESI framework in a real-world public procurement context.

The solar installation on the central offices of XacBank in Ulaanbaatar, Mongolia, represents one the first pilots of the ESI model in the country.

II) SUSTAINABLE ENERGY-AS-A-SERVICE

About servitisation

According to the International Energy Agency (IEA) more than a third of all emissions reductions required to achieve the Paris Agreement target and limit global warming by 1.5°C can be solely achieved through energy efficiency. But the uptake of modern, efficient energy systems is facing several barriers, from higher upfront costs compared to conventional equipment to perceived performance and maintenance risks of new and unfamiliar technologies.

Servitisation refers to an innovative business model where customers engage with solutions on a pay-per-use model (focused on OPEX) rather than purchasing the physical asset (traditional CAPEX model). When applied to energy-efficient and renewable energies, clients benefit from the advantages of high efficiency and state of the art solutions, while solely paying for the amount of service they consume, while the technology providers retain the ownership and maintenance responsibilities. Hence, this approach encourages the uptake of modern, efficient systems by sparing end-users the costs of acquiring and operating the equipment as well as any associated risks.

BASE started to leverage the servitisation business model as part of the Cooling-as-a-Service (CaaS) Initiative, on behalf of the Clean Cooling Collaborative (formerly K-CEP) with the objective to scale-up the demand for efficient, clean cooling systems, through the use and promotion of the innovative CaaS business model. Building on this success, BASE pursued the deployement of the model through the Efficiency-as-a-Service (EaaS) Initiative, focused on three european countries, the Servetia Initiative, focused on Switzerland, and the Servitisation for the Energy Transition (SET) Alliance, aiming to promote the model globally.

BASE

SUSTAINABLE ENERGY

INNOVATIVE BUSINESS MODELS

SERVETIA IN SWITZERLAND

VISIT PROJECT PAGE →

Setting the Context

According to the **Swiss Federal Office of Energy (SFOE)**, buildings are responsible for a significant portion of Switzerland's CO_2 emissions; decarbonising this sector is therefore crucial for achieving the nation's net-zero goals by 2050. However, achieving sustainable buildings is often complex. While many Swiss building owners are willing to decarbonise, projects frequently stall due to limited technical support, internal capacity constraints, or a lack of suitable financing models. This particularly affects small to mid-sized entities like hospitals and industrial facilities, who can be overlooked by traditional finance and overwhelmed by implementation complexities.

The **Servetia Initiative** was launched to address these challenges. Partnering with **Enterprise for Society (E4S)** - the collaborative centre of EPFL, IMD and UNIL - and supported by **Fondation Valéry**, the initiative showcases the financial and environmental value of servitisation, which allows building owners to access decarbonisation solutions, such as efficient heating, cooling, LED lighting, and solar PV, without large upfront investments. Instead, they pay for the service received, like agreed comfort levels or kWh of solar energy, on a pay-per-use basis.

Servetia aims to promote these service models, build market interest, and develop the capacity of local stakeholders through pilot projects. The long-term goal is to mainstream and standardise these approaches to scale sustainable energy across healthcare, industry, and other sectors in Switzerland. The initiative focuses on bridging early-stage project gaps, mobilising co-financing, and accelerating EaaS adoption.

Review of 2024

Throughout 2024, the Servetia Initiative focused on direct client engagement and strategic development. These efforts aimed to understand market needs, advance pilot projects, and refine the approach to scaling servitisation in Switzerland.

The initiative actively supported a diverse portfolio of potential pilot projects, helping end-users analyse their needs and identify techno-

PERIOD

2023-2025

COUNTRIES

Switzerland

PARTNERS

Entreprise for Society (E4S)

FUNDER

Foundation Valéry

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

6 institutions and companies closely advised on service models to facilitate their shift to more sustainable energy solutions.

NUMBER OF ORGANISATIONS ENGAGED

The initiative cultivated a broad ecosystem of technology suppliers, financial institutions (e.g., UBS, BKB, Solas Capital), in addition to the initial needs assessments conducted with potential end-users who received initial guidance but did not evolve into full advisory beneficiaries this year.

RESOURCES CREATED

MRV (Measurement, Reporting and Verification) framework on energy consumption and efficiency, developed and validated by the Efficiency Valuation Organisation (EVO); and the conceptualisation and refinement of the "Servetia 2.0 - Servetia Catalytic Platform."

AMPLIFICATION REACH

2 articles, and Servetia featured as panellist at events such as Building Bridges, Showcase 2030 and Solar & Storage Forum III at EPFL, Lausanne.

logical, financial, and strategic gaps in their decarbonisation efforts.

Key engagements included:

- **Nexans Industrial Campus (Cortaillod, Neuchâtel):** Following in-depth analyses, Servetia supported tender preparation for Heating-as-a-Service (HaaS) and Cooling-as-a-Service (CaaS), with HaaS evaluation ongoing. Audits were completed, and Measurement, Reporting, and Verification (MRV) solutions were explored.

More information on the collaboration in the article here:

- **Spital Zollikerberg (Hospital, Zurich):** An in-depth analysis of decarbonisation gaps was conducted. Solutions were proposed, and a tendering process was explored for PV Contracting, LED Retrofits, and HaaS. However, progress faced challenges due to conflicting internal priorities within the hospital, leading them to continue investigations independently.
- **Schulthess Klinik (Hospital, Zurich):** Feasibility analysis and tendering support were provided for PV Contracting. The project saw delays due to lengthy public funding procurement processes and awaited the client's green light for tendering.

More information on these collaborations in the articles below:

- **PFLEGI-Areal (Senior Housing & Care):** An early-stage assessment explored a decarbonisation roadmap for this multi-building site, focusing on Lighting-as-a-Service.
- Initial needs assessments and discussions were held with other important players, including **Kantonsspital St. Gallen and Nestlé Waters**, exploring options like Battery-as-a-Service and EaaS for E-Mobility.

Beyond pilot projects, 2024 efforts laid the groundwork for broader servitisation adoption. A major focus was developing the "Servetia 2.0" concept, which outlines the Servetia Catalytic Platform, described in more detail below.

Progress was also made on the development of an MRV framework. A report was produced in collaboration with E4S, alongside work with Daniel Magnet, Past Chair of the Efficiency Valuation Organization (EVO)'s M&V Training Committee, on MRV tools and data for pilots like Nexans.

To raise awareness about the solution and the initiative, the team conducted diverse communication activities and created outreach materials, which included the continued improvement of the website, creating articles and filming video content for dissemination (e.g., during the **Building Bridges event** or interview, such as the planned Nexans video).

Finally, the initiative pursued its ecosystem-building efforts, engaging technology providers, potential financing partners, and other stakeholders to foster a supportive servitisation environment.

The year provided critical insights into the Swiss market:

- **End-User Adoption:** Challenges included slow decision-making by end-users due to internal complexities, insufficient data, undefined decarbonisation paths, and a preference for traditional capital expenditure (CAPEX) over service models. Differing priorities among stakeholders also created bottlenecks.
- **Data and Provider Readiness:** Limited granular energy data complicated project validation. Many technology providers also needed guidance to structure XaaS offerings beyond simple leasing.
- **Financing:** While financiers showed interest, they require scalable, standardised, and de-risked project pipelines. These learnings directly informed the strategic shift towards the Servetia 2.0 Catalytic Platform.

Through its 2023-2024 activities, the Servetia Initiative laid significant groundwork for transforming how energy efficiency and renewable energy projects are implemented in Switzerland. Servetia's impact in 2024 has been to help create the necessary conditions, strategies, and partnerships to unlock future decarbonisation benefits by de-risking projects and fostering a more receptive market for energy servitisation in Switzerland.

The initiative's performance is focused on creating market-enabling tools and establishing a successful pilot to demonstrate the model's viability. Long-term indicators included building a pipeline of opportunities, increasing the number of companies that are able to deploy the servitisation model, and ultimately achieving reduced greenhouse gas emissions. Furthermore, the engagement with clients like Nexans and the various hospitals has been crucial in building a tangible pipeline, while interactions with technology providers and financiers have begun building the capacity for more companies to offer servitisation models.

Future of the project

Looking ahead, the Servetia Initiative will evolve into the Servetia Catalytic Platform (SCP), which will be resumed in a concept note in early 2025. Building on lessons learned, this new platform will use a revolving mechanism to scale renewable energy and energy efficiency projects in Swiss buildings through "pay-as-you-go" service models. The SCP will de-risk and accelerate project adoption by providing early-stage support, securing funding, and building a pipeline of investment-ready opportunities.

The main pillars of the SCP's work will be:

- **Project Sourcing & Development:** Identify high-impact projects (targeting over 20 percent energy savings) in commercial, industrial, and public buildings, with an initial focus on expanding Solar PPA clients to other services. The team has already identified a potential pipeline of over CHF 50 million in projects.
- **Expert & Financial Support:** Provide technical due diligence, business plan support, and tender assistance to ensure projects are bankable. Technical assistance will be offered on a 'pay-on-success' basis to reduce upfront risk for building owners.
- **Blended Finance & Revolving Fund:** Structure and secure a mix of funding, including grants and private investment. A core feature will be a revolving fund, where returns from successful projects are reinvested to support a continuous cycle of new decarbonisation initiatives.
- **Quality & Impact Assurance:** Monitor project implementation and performance using robust MRV tools to track economic, environmental, and social benefits.

Yannick Heinrich (left), Servetia's lead, presenting the initiative and the benefits of as-a-service models to accelerate the shiftto energy efficient and renewable solutions at Building Bridges 2024's *Towards a Qualitative Economy – Servitization Business Models as a way to accelerate the Ecological Transition* session.

SUSTAINABLE ENERGY

BASE

INNOVATIVE BUSINESS MODELS

SERVITISATION FOR ENERGY TRANSITION (SET) ALLIANCE

VISIT PROJECT PAGE →

Setting The Context

Progress towards a net-zero 2050 remains off-track, prompting renewed focus on the role of innovative business models in overcoming persistent market barriers and accelerating the uptake of clean, energy efficient solutions in the built environment. In sectors with intensive energy consumption, notably transport and buildings, service-based models (e.g., Cooling-as-a-Service) are shifting ownership and operational responsibility to specialised providers, leading to enhanced efficiency and long-term value. 'Product-as-a-Service' business models are also recognised in regulatory frameworks like the EU Taxonomy for their potential to contribute to both decarbonisation and the circular economy. Realising their full impact, however, depends on continued investment in capacity building to support their development, adoption, and scaling across sectors and regions.

In 2022 BASE, together with a Steering Committee formed of key partners from the CaaS Alliance (in alphabetical order: **Aston Business School, ATMOsphere**, **Energy Partners Refrigeration, KAER, The Advanced Services Group** and The University of Oxford), launched the global **Servitisation for Energy Transition (SET) Alliance**. Building upon insights from previous BASE-led initiatives such as **Cooling-as-a-Service (CaaS)** and **Efficiency-as-a-service (EaaS)**, the SET Alliance aims to mainstream the 'as-a-Service' model for clean and energy efficient technologies across sectors. The Alliance also collaborates with other ongoing BASE projects including YourVCCA (coldrooms as-a-Service) and the Servetia programme (energy and efficiency-as-a-Service).

Review of 2024

The SET Alliance, with BASE serving as the Secretariat, continued its efforts across four strategic pillars: knowledge sharing and advocacy, capacity building, tools and resource development, and the execution of strategic projects.

- **Knowledge Sharing and Advocacy**

To enhance understanding and visibility of the model, the SET Alliance produced a series of articles and case studies focusing on sectors such as lighting, cooling and compressed air.

PERIOD

Since 2021

COUNTRIES

Global

PARTNERS

CaaS members, EaaS members, Your VCCA partners.

FUNDERS

SET Alliance members, Clean Cooling Collaborative, Circular Buildings Coalition, European Union's Horizon 2020 research and innovation programme, Circular Building Coalition.

ACHIEVED IMPACT

(SINCE START OF THE PROJECT. DATA AVAILABLE FROM MEMBERS OF THE ALLIANCE)

FINANCE MOBILISED

Over USD 160 million.

EMISSION REDUCTION

Over 81,000 tonnes of carbon emission per year from energy efficiency improvements.

ENERGY SAVINGS

Over 130 GWh.

REACH OF CAPACITY BUILDING ACTIVITIES

Over 50 organisations workshops, consultancy.

AMPLIFICATION REACH

2 webinars attracted 115 attendees and 450 views.

These publications provided in-depth analyses of the challenges and opportunities associated with deploying servitisation models, offering valuable insights into customer needs and the scalability of solutions. A highlight of the year was the inaugural Efficiency-as-a-Service (EaaS) Innovation Showcase awards, established to recognise and promote impactful initiatives from across the globe.

From more than 15 submissions, awardees included solar-microgrids as a service for rural healthcare centres in Malawi, irrigation-as-a-Service and climate-smart farm advisory in India, and Cooling-as-a-Service in cargo and office facilities at Changi Airport in Singapore. These exemplary solutions underscore the potential of EaaS models to drive energy efficiency, decarbonisation and create positive social impact across diverse contexts.

Two of the EaaS Prize case studies are accessible here:

INDIA SOLAR PV & IRRIGATION SYSTEMS

Irrigation-as-a-Service for smallholder farmers in India

MALAWI SOLAR PV

Solar-as-a-service microgrids for public and private healthcare facilities in rural Malawi

- **Capacity Building**

As part of its capacity-building efforts, the Alliance hosted a series of webinars exploring key topics such as the role of servitisation in decarbonising the built environment, enabling circularity, and harnessing digital tools to unlock value. These sessions promoted knowledge exchange and showcased best practices for implementing 'as-a-Service' models.

Recognising the need to strengthen capacity across a variety of stakeholders including providers, financiers and end-customers, the Alliance expanded its activities by establishing a dedicated advisory function to provide tailored support to its members. A strategic partnership was established with **P2S Management Consulting** to further enhance support for providers of clean and energy efficient technologies transitioning to the model.

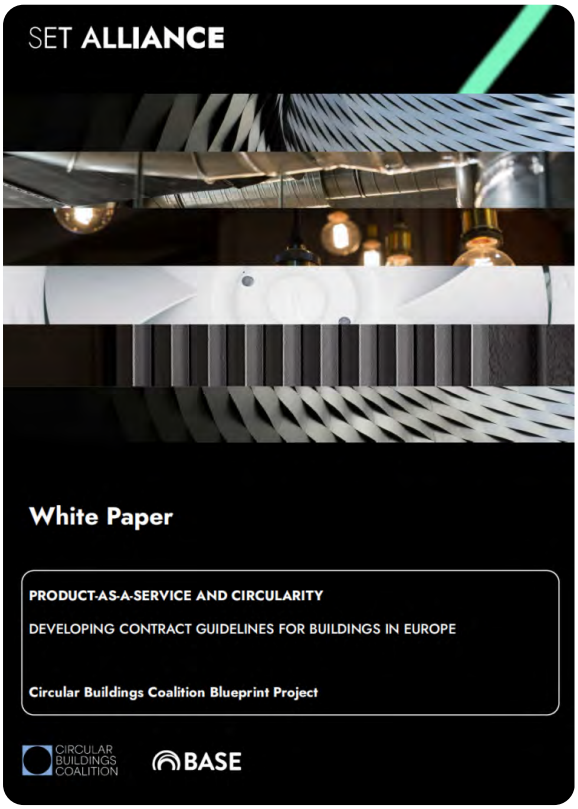
- **Tool and Resource Development**

The SET Alliance continues to monitor and promote the use of tools developed under the CaaS and EaaS initiatives (such as pricing models and standardised contracts designed) which support the implementation and scaling of service-based solutions.

With guidance from its Steering Committee, the Alliance initiated the process of updating the CaaS contract to reflect evolving market needs and best practices. Under the first phase of a blueprint project in development with the **Circular Buildings Coalition** (CBC), a **white paper** was published exploring circularity in the context of Service-based models for building services such as cooling or lighting as-a-Service.

- **Strategic Projects**

In early 2024 the SET Alliance blueprint project 'Product-as-a-Service and Circularity: Developing contract guidelines for buildings in Europe' was selected by the **CBC** for its second phase. The second phase of the project encompasses stakeholder engagement through interviews, event participation and online workshops to facilitate the development of guidelines to clarify circularity in the context of PaaS for building services such as cooling, heating and lighting. The guidelines will be released in 2025.



The white paper developed as part of the CBC project, offers a comprehensive overview on how Product-as-a-Service models can enable circular practices as well as challenges and best practices to effectively embed circularity at the contractual level.

Future of the project

In 2025, the Alliance will continue to monitor the development of the as-a-Service market, identifying emerging players, potential members, and collaborative opportunities. The Alliance will also continue to publish case studies to showcase successful projects and organise webinars to share insights on relevant topics.

Efforts will also continue on updating the standardised CaaS and EaaS contracts in line with best practices from industry and research, as well as updating the CaaS pricing model tool to improve sensitivity and comparison with other procurement models. The Alliance will also continue to explore opportunities for strategic projects and consultancy.

AREA OF WORK:

SUSTAINABLE ENERGY

2.2 PILOTING INNOVATIVE ENERGY SOLUTIONS

PROJECTS:

DEMONSTRATION PROJECTS FOR INTEGRATED ON-GRID, ON-SITE, ON-ROAD BUSINESS MODEL IN COLOMBIA, KENYA AND MEXICO

ENERGY EFFICIENCY PILOT PROJECTS FOR COSTA-RICA

DEVELOPING VIRTUAL POWER PLANTS IN BRAZIL, MEXICO AND COLOMBIA

SUSTAINABLE ENERGY

BASE

PILOTING INNOVATIVE ENERGY SOLUTIONS

DEMONSTRATION PROJECTS FOR INTEGRATED ON-GRID, ON-SITE, ON-ROAD BUSINESS MODEL IN COLOMBIA, KENYA AND MEXICO

VISIT PROJECT PAGE →

Setting The Context

The high costs and complex infrastructure of solar energy, battery storage, and electric vehicles hinder the global shift to sustainable transport, particularly in underdeveloped emerging markets. These markets face challenges such as a fragmented EV sector, renewable energy integration difficulties, a scarcity of ultra-fast charging stations, and limited financial and technical support for new mobility solutions.

Reliable charging infrastructure and advanced energy management are crucial for user convenience. Battery swapping presents a potential solution by offering a faster alternative to traditional charging, though pilot programs are needed to validate its practicality. Furthermore, technical challenges like heat generation, electromagnetic interference, and noise need to be addressed to establish robust clean transport systems in developing economies.

Review of 2024

In 2023, demonstration projects in Kenya and Mexico, aimed to validate e-mobility solutions that integrate clean technologies and test scalable business models. These pilots were part of a broader strategy to promote replicable, market-transformative models in personal transportation. In Kenya, battery swapping for e-two-wheelers was trialed using a franchising business model near Nairobi. In Mexico, an energy services company (ESCO) operated by the public sector in Hermosillo implemented a photovoltaic system to power electric patrol vehicles.

The insights gained from these two initiatives informed the Colombia pilot. Extensive groundwork was laid through literature reviews, market assessments, and policy analysis. Finance mechanisms and potential ESCOs were mapped, allowing for an informed selection of a pilot with high replicability. The chosen demonstration was led by **UNERGY** in Medellín, in partnership with **Muverang**, a rental platform.

The Colombia pilot aimed to develop a clean energy-integrated solution, combining on-site, on-road, and on-grid approaches. A 10 kWp photovoltaic system was installed to power a battery swapping station for light electric vehicles, particularly NIU-brand motorbikes.

PERIOD

Since 2021

COUNTRIES

Colombia, Kenya, Mexico

PARTNERS

UNERGY, Muverang

FUNDERS

Integrate to Zero (I2Z)

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

Over 100 initial users (motorbike riders), utility and mobility companies.

CLEAN ENERGY GENERATION

10 kWp photovoltaic system (on-grid) as of May 2025.

PILOTS

1 solar-powered battery swap station as the pilot, followed by 4 stations where over 1,400 swaps have been completed.

The station, automated and connected via a mobile app, allowed users to exchange depleted batteries within minutes. The app provided real-time data on battery availability and reservation options, streamlining the user experience and reducing charging downtime by up to five hours per exchange.

Operational from February to March 2024, the Medellín pilot demonstrated a 20 percent reduction in battery swap costs, offering significant operational savings. It also highlighted gaps between theoretical and real battery charging power, found to be 50 percent lower, suggesting areas for technical optimisation. Additionally, the pilot emphasised the importance of user incentives for returning batteries in optimal conditions to prolong battery lifespan and further reduce costs.

Strategic insights from the pilot included the need for a city-wide infrastructure to meet demand and the effectiveness of loyalty programs to stabilise revenue through a membership model. The influence of public holidays on usage patterns and data collection also informed future planning. These initiatives received both financial and technical assistance to implement and assess the most suitable business models for clean technology integration. The overarching goal was to provide a replicable blueprint, not only documenting project-specific outcomes but also contributing valuable market insights and recommendations through a final report.

Future of the project

Following the pilot, Unergy intends to expand the model to include more users from Muverang and integrate individual users from NIU Colombia, further embedding the battery-as-a-service (BaaS) concept into Colombia's e-mobility landscape.

Colombia presents a strong outlook for clean mobility, especially when it comes to combining battery swapping with solar energy. This project's replicability enables expansion to other urban areas, potentially including more vehicle types and users.

UNERGY intends to apply the insights gained to increase charging stations and strengthen its alliances with Muverang and NIU Colombia. The long-term vision involves wider acceptance of the battery-as-a-service model and the integration of financial and policy support mechanisms identified during the pilot.

For future expansion, ongoing collaboration among stakeholders such as I2Z, utility providers, financial institutions, and local governments is crucial. Colombia's renewable energy capacity, along with data-informed strategies and adaptable business approaches, creates a favorable setting for scaling sustainable transportation solutions.

Pilot location of the first battery-swapping station for two-wheelers in Medellín, Colombia.

SUSTAINABLE ENERGY

BASE

PILOTING INNOVATIVE ENERGY SOLUTIONS

ENERGY EFFICIENCY PILOT PROJECTS FOR COSTA RICA

VISIT PROJECT PAGE →

Setting The Context

Energy efficiency (EE) is essential for reducing greenhouse gas emissions, curbing energy demand, and achieving global climate targets. Yet, despite its importance, global investment in EE remains significantly below the levels required to meet the goals of the Paris Agreement. According to the International Energy Agency, annual investment in energy efficiency and electrification was around USD 295 billion in 2021, less than half the USD 620 billion needed per year by 2030.

In Costa Rica, the government has committed to transforming the energy landscape through its National Decarbonization Plan 2018–2050. The plan envisions a modern, energy-efficient economy powered by clean energy, with public buildings playing a key role. However, EE implementation in the public sector is often hindered by high upfront costs, weak procurement frameworks, and limited technical capacity. To address these barriers, Costa Rica is implementing an innovative financing model to catalyse energy efficiency investments in public buildings.

Review of 2024

In previous years, efforts focused on developing a Revolving Loan Fund for Energy Efficiency (EE-RLF) in Costa Rica, a flagship initiative aimed at transforming the energy efficiency market in public institutions. Implemented by the **Ministry of Environment and Energy (MINAE)** with technical support from the BASE Foundation and the **United Nations Environment Programme (UNEP)** through the **United for Efficiency (U4E)** initiative, the project is funded by the **Global Environment Facility (GEF)**.

In 2024, after uncertainties regarding national authorities' willingness to establish the revolving instrument, the goal of the project shifted to create a Green Procurement Process, where total costs of ownership would stand as a stronger criterion than initial required investments to encourage the selection of efficient and renewable energy solutions. To achieve this, BASE collaborated with MINAE and UNEP to implement pilot projects in public buildings. Key initiatives included a refrigeration upgrade at the PIMA industrial food warehouse, where inefficient air conditioning was replaced to enhance efficiency and lower cooling costs.

The second project was a geriatric hospital that underwent an air conditioning and lighting modernisation project.

PERIOD

Phase I: 2018–2020

Phase II: 2023–2024

COUNTRIES

Global

PARTNERS

UNEP, U4E, MINAE, CABEI

FUNDERS

Global Environment Facility (GEF)

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

2 public institutions through pilot projects.

RESOURCES CREATED

3, including an Energy Assessment, an Operational Manual and a Project Video to raise public building managers' awareness.

This included the installation of high-efficiency LED lighting, which aimed to reduce electricity consumption and enhance illumination. BASE managed the procurement, contractor selection, and supervision of these installations, ensuring high technical standards and cost-effectiveness.

The pilots served not only as proof-of-concept projects but also as vehicles for capacity-building. Local contractors and engineers were engaged in installation and commissioning, facilitating knowledge transfer and fostering public-private collaboration.

A crucial aspect of the project's success in 2024 was the documentation and optimisation of the public procurement process. Recognising that traditional procurement often prioritises short-term capital costs over long-term savings, the project introduced tools and practices that emphasised lifecycle cost analysis, technical performance, and verifiable outcomes. This enabled institutions to make more informed and sustainable decisions regarding EE investments.

A case study video was produced **here**.

Future of the project

As the project enters its final year, the focus is shifting toward scaling and replication. The pilot installations will be used as models to encourage other public institutions to pursue similar EE projects. The ultimate goal is to develop and mainstream the use of Green Procurement processes across public institutions. The project also seeks to promote the replication of this model in neighboring countries through knowledge sharing.

The National Hospital of Geriatrics and Gerontology Raúl Blanco Cervantes in San José underwent an energy efficiency upgrade as part of one of two pilot projects, delivering energy savings, improved comfort, and a precedent for future initiatives.

SUSTAINABLE ENERGY

BASE

PILOTING INNOVATIVE ENERGY SOLUTIONS

DEVELOPING VIRTUAL POWER PLANTS IN BRAZIL, MEXICO AND COLOMBIA

VISIT PROJECT PAGE →

Setting The Context

As Latin America accelerates its transition toward sustainable energy systems, innovative digital solutions such as Virtual Power Plants (VPPs) are becoming central to rethinking how electricity is generated, distributed, and consumed. Virtual Power Plants aggregate decentralised energy resources (DERs) such as rooftop solar panels, battery storage systems, and smart appliances into a coordinated system that behaves like a single, flexible power plant. This transformation empowers consumers to become energy producers, optimises energy flows, reduces emissions, and bolsters grid resilience.

VPPs are particularly powerful in a region like Latin America, which enjoys abundant renewable energy potential and faces pressing challenges related to grid reliability, access, and energy poverty. Moreover, as the costs of smart meters, IoT devices, and battery storage decline, and digitalisation becomes mainstream, the enabling environment for VPPs is fast evolving.

BASE's and I2Z regional VPP initiative, spanning Colombia, Brazil, and Mexico, aims to accelerate the adoption of these technologies, test viable business models, and generate real-world data to inform the design of scalable and impactful VPP solutions.

Review of 2024

In Colombia, BASE has partnered with **CELSIA**, the country's leading utility company, to launch a pilot VPP project. The effort focuses on integrating decentralised energy assets like rooftop solar and battery systems into a unified digital platform that can dynamically manage power supply and demand. These resources, distributed across various urban and rural customers, are coordinated via a central control system that optimises energy flows to ease pressure on the grid during peak demand periods.

The VPP pilot in Colombia represents a concrete shift from centralised generation to decentralised, demand-responsive energy systems. Through real-time optimisation, DERs are deployed to support grid balancing, frequency control, and load shifting. As a result, customers benefit from lower energy bills, while the grid benefits from greater flexibility and stability.

PERIOD

2024-2026

COUNTRIES

Global

PARTNERS

CELSIA (Colombia), Grupo Dragon (Mexico), Green-Ant, and Auren (Brazil)

CLIENTS

Integrate to Zero (I2Z), Pooled fund on International Energy (PIE)

ACHIEVED IMPACT

PILOTS

2 pilots and 1 simulation demonstration in 3 countries.

Meanwhile, in Brazil, a preliminary phase has been initiated to gather critical data from a cohort of residential and commercial prosumers (consumers who also produce energy). This involves installing microgrid controllers and monitoring systems that track energy production, consumption, and available flexibility. The key objective is to understand how aggregated energy resources can participate in demand response programs, generate revenue, and potentially feed surplus electricity back into the grid under Brazil's evolving regulatory landscape.

In Mexico, a complementary pilot was launched in Mexico City in collaboration with **Grupo Dragon**, focusing on the retail sector. Here, rooftop solar PV systems were installed on commercial properties and connected to smart meters that feed real-time consumption and generation data into a digital monitoring platform. The project tests a model where surplus energy can be sold to qualified users, leveraging retail-sector aggregation to deliver measurable efficiency and commercial benefits.

Future of the project

The work ahead will focus on real-world implementation. Though this project has already achieved key milestones. The next step is to test energy aggregation and commercialisation in live market conditions, helping to validate regulatory and business model assumptions.

Across all three countries, BASE will continue engaging with regulators, utilities, and other stakeholders to share findings, recommend policy adjustments, and foster an ecosystem where VPPs can thrive.

03

AREA OF WORK

SUSTAINABLE FINANCE

AREA OF WORK:

SUSTAINABLE FINANCE

3.1 CIRCULAR ECONOMY FINANCING

PROJECTS:

TOOLS AND CAPACITY BUILDING IN LATIN AMERICA AND THE CARIBBEAN

DEVELOPMENT FINANCING CATEGORISATION SYSTEM

CIRCULAR ECONOMY FINANCING STRATEGY FOR THE CIRCULARITY LATAM FUND

SUSTAINABLE FINANCE

CIRCULAR ECONOMY FINANCING

TOOLS AND CAPACITY BUILDING IN LATIN AMERICA AND THE CARIBBEAN

Setting The Context

Our prevailing **"take-make-waste" economic system** severely strains our planet. It is crucial to **decouple economic growth from resource depletion**, which fuels climate change, biodiversity loss, and pollution. The **circular economy (CE)** offers a powerful, triple-impact solution: economic, environmental, and social. It optimises resource use, supports economic development while conserving and regenerating natural resources, and generates new, value-added economic activities and jobs.

The opportunity for a circular transformation in **Latin America and the Caribbean (LAC)** is immense. Despite a largely linear economy, a clear path to a circular future exists. Embracing circularity across sectors like food systems, construction, manufacturing, and energy could create millions of new jobs and fundamentally reshape the region.

LAC is already leading the way with **national CE strategies and policies**. This regional momentum fosters economic integration and paves the path for sustainable development.

Unlocking this potential demands significant **investments in circular innovations** across all value chains. The financial sector is vital in identifying and funding these innovations, thereby accelerating a low-carbon circular economy. Crucially, **Micro, Small, and Medium Enterprises (MSMEs)**, which represent key drivers of economic growth and job creation in LAC, must be included and supported to ensure a comprehensive transition to a circular economy.

Three years ago, the **IDB Group** initiated efforts to engage the financial sector in financing the circular economy, beginning in Colombia and subsequently expanding to Peru until early 2024. Building on this, by the end of 2023, and through a collaboration with **United Nations Environment Programme Finance Initiative (UNEP FI)** and the support of **Climate Technology Centre and Network (CTCN)** and **Go4SDGs**, we continued this work throughout 2024. Additionally, leveraging the expertise and tools we developed, BASE began providing direct support, through **IDB Invest**, to an equity investment fund specifically targeting CE investments in the LAC region. Our focus has been on enabling the financial sectors in Chile, Uruguay, Costa Rica, and the Dominican Republic to play their part in financing the transition to a circular economy.

PROMOTING CIRCULAR ECONOMY FINANCING IN PERU

PERIOD

2023 - 2024

COUNTRIES

Peru

PARTNERS

Federación Peruana de Cajas Municipales de Ahorro y Crédito (FEPC-MAC)

FUNDER

IDB Invest

Following its successful engagement in Colombia, **BASE was enlisted by IDB Invest through a collaboration with the Peruvian Federation of Municipal Savings and Credit Banks (FEPCMAC)** to foster similar advancements in Peru's financial and microfinance sectors. This ongoing partnership, active throughout 2023 and continuing into early 2024, has been instrumental in building a foundation for CE financing.

Key outputs during 2023 from this work included a comprehensive **CE ecosystem diagnosis**, the establishment of a robust **categorisation system** to identify circular opportunities, and the delivery of a dedicated **training program** for financing the circular economy. Their collective goal was to cultivate a thriving ecosystem for **CE financing**, significantly strengthening the microfinance sector's capacity.

Review of 2024

In 2024, BASE developed an **Action and Monitoring Plan for FEPCMAC and the Municipal Savings and Credit Banks (CMACs)**. This plan is designed to integrate the circular economy into the CMACs system, with the aim of fostering **CE-focused financial products**, increasing their circular finance portfolio, and ultimately enhancing the circularity of their project investments over the medium and long term.

Building directly on BASE's groundwork, FEPCMAC, in collaboration with eight CMACs, with the support of IDB Invest and **GIZ**, spent 2024 developing **Crediciclo**, a new CE financial product. This initiative included both product development and comprehensive training for both end-customers and credit analysts.

Future of the project

BASE's direct engagement on this initiative has concluded. Nevertheless, the seeds sown through this project have fostered the CMACs' active participation in CE financing, a commitment distinctly demonstrated through their development of the **Crediciclo** financial product.

ACHIEVED IMPACT

REACH OF CAPACITY BUILDING ACTIVITIES

8 Municipal Savings and Credit Banks and 44 participants that were actively involved.

VISIT PROJECT PAGE →

CIRCULAR ECONOMY DEVELOPMENT FINANCING CATEGORISATION SYSTEM

The project was strategically designed to integrate the financial sector into the circular economy across Latin America and the Caribbean, focusing on Chile, Costa Rica, Dominican Republic and Uruguay.

In **Chile, Costa Rica, and Uruguay,** it operates through three core components:

1. **CE Ecosystem Diagnosis**: This involves a thorough analysis of the CE landscape in each country, identifying both the **enablers and barriers** that influence the financial sector's involvement in financing circular initiatives.
2. **Tailored CE Categorisation System Development**: This component focuses on creating a **suite of tools** designed to help financial institutions identify circular projects and the potential financing opportunities they present.
3. **Capacity Building Program**: This involves designing and implementing targeted training programs for financial institutions. The goal is to **enhance their understanding** and ability to support businesses that are actively contributing to the transition to a circular economy.

For the **Dominican Republic**, the focus was to develop a CE Categorisation System built on the knowledge of our local consultants and a recently published report by a third party that explored the state of CE financing in the country.

The project's expected outcome is an enhanced capability of public and private banks in Chile, Costa Rica, and Uruguay. In the Dominican Republic, the project aims to develop a **CE categorisation system** based on existing understanding of the circular ecosystem, fostering collaboration and advancing the CE financing agenda.

PERIOD

2023 - 2025

COUNTRIES

Chile, Costa Rica, Dominican Republic, Uruguay

PARTNERS

Agencia de Sustentabilidad y Cambio Climático (ASCC) in Chile, Ministerio de Ambiente y Energía of Costa Rica, Ministerio de Medio Ambiente y Recursos Naturales of the Dominican Republic, Ministerio de Ambiente Uruguay

FUNDER

Climate Technology Centre and Network (CTCN), Go4SDGs

ACHIEVED IMPACT

REACH OF CAPACITY BUILDING ACTIVITIES

11 financial institutions.

RESOURCES CREATED

Circular Economy Categorisation Systems for 4 countries. CE Ecosystem Diagnosis for 3 countries.

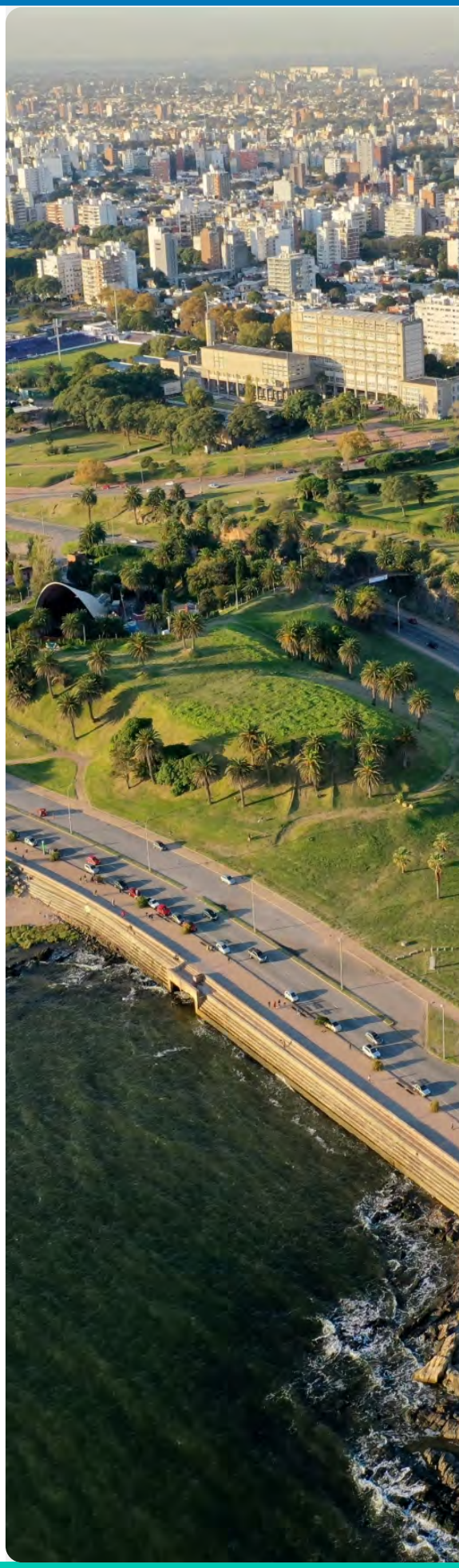
VISIT PROJECT PAGE

Review of 2024

During 2024, the project witnessed significant progress across the targeted countries:

- **Costa Rica** emerged as a frontrunner, successfully concluding all three components. This included the completion of the comprehensive capacity-building program, which saw active participation from 11 financial institutions. Their engagement represented crucial areas such as sustainability, risk management, and corporate banking, underscoring a broad institutional commitment. A key activity of the capacity-building program was the visit to the company Pedregal, which has developed a technology to incorporate plastic residue in construction material .
- In **Uruguay**, substantial progress was made with the successful completion of the first two key components: the CE Ecosystem Diagnosis and the development of the CE Categorisation System.
- **Chile** also advanced considerably, with the diagnosis of its circular economy ecosystem fully concluded. The crucial CE Categorisation System is currently in its final revision stage, nearing completion.
- For the **Dominican Republic**, the year's efforts were strategically focused on the development of its categorisation system. This was built upon an existing understanding of the country's circular ecosystem, with the overarching aim of fostering collaboration and propelling forward the CE financing agenda within the nation.

Field visit at Pedregal's factory, capable of turning difficult-to-recycle plastic waste into a value-added aggregate.



Our journey so far has yielded crucial insights for continuing to foster a robust circular ecosystem to involve FIs:

- It is key to **bring the financial system to the forefront of the conversation** as a pivotal player in the circular economy transition.
- We must effectively **document and disseminate CE case studies**, framing them in a financial language that highlights profitability, risks, and successful financial closures.
- Continuously **strengthening the regulatory framework** is essential to enable the widespread adoption of circular business models.
- Promoting **spaces for international exchange and learning** with other countries and regional initiatives, such as Costa Rica's Inter-sectoral Committee on CE or the LAC CE Coalition, is invaluable.

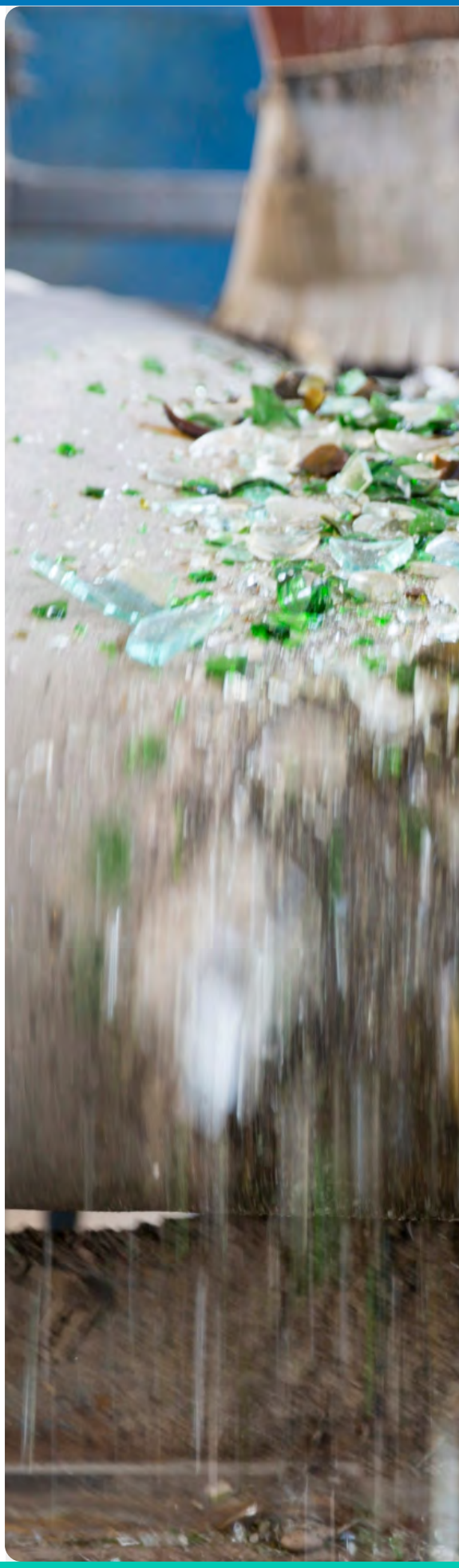
Future of the project

As the project progresses, the next steps are designed to leverage the completed components and further embed the circular economy within each country's financial landscape:

In Costa Rica, the focus now shifts to wider dissemination and engagement. Having successfully concluded all three main components -the ecosystem diagnosis, the CE categorisation system, and the capacity-building program- the next crucial step is to widely share the project's achievements and the tangible results of the capacity-building initiatives. This will be instrumental in promoting the deeper involvement of key financial system stakeholders within the **Intersectoral Committee of Circular Economy**, fostering a collaborative environment for national CE advancement.

For **Chile and Uruguay**, the immediate priority is to capitalise on the foundational work already completed. With both the CE ecosystem diagnosis and the CE categorisation system finalised (or in final revision for Chile), the project will now actively promote these achievements to financial institutions. The goal is to **engage these institutions** to launch and fully implement the comprehensive capacity-building program, equipping them with the knowledge and tools to actively finance the circular transition.

In the **Dominican Republic**, the upcoming phase centers on solidifying the tools developed and driving further stakeholder engagement. The primary objective is to **complete the CE categorisation system**, which is being built upon the existing understanding of the country's circular ecosystem. Once finalised, this vital tool will be socialised among relevant stakeholders, aiming to mobilise and advance the CE financing agenda in the country.



CIRCULAR ECONOMY FINANCING STRATEGY FOR THE CIRCULARITY LATAM FUND

This project, commissioned by IDB Invest, aims to support the development of the Circularity Latam Fund by equipping its managers with a robust CE taxonomy. The consultancy provides technical assistance in classifying investments across CE categories, defining impact metrics, and designing tools for standardised reporting. The strategy also integrates Just Transition principles to ensure social inclusiveness. Core activities include a market assessment across Colombia, Costa Rica, Panama, and Mexico, the definition of eligibility criteria for CE projects, and the design of environmental, social, and economic KPIs to guide future fund investments.

The LATAM Circularity Fund, led by **Mesoamérica** and **Evolve Management Company**, is a regional USD 100 million equity fund designed to accelerate the adoption of circular practices in Latin America. It targets sectors such as plastics, biomass, and agricultural waste. The Fund prioritises scalable, proven business models and technologies supported by private sector partners, reducing dependency on public backing to manage risk and enable scale. The technical work performed in this consultancy lays the foundation for the Fund's taxonomy, investment strategy, and monitoring systems.

Review of 2024

In 2024, the project achieved critical milestones in Phase 1, including two critical outputs: a detailed market assessment of CE opportunities and a robust CE Categorisation System (Sistema de Categorización, SdC).

The market assessment covered plastic and biomass value chains in Colombia, Costa Rica, Panama, and Mexico. It identified 48 business cases across the four countries, highlighting high-potential segments for CE investments. The analysis considered enabling environments, market conditions, and enterprise maturity, concluding that Colombia and Mexico exhibit medium to high circularity potential, while Panama and Costa Rica show more moderate potential due to institutional or infrastructure gaps.

PERIOD

2024 - 2025

COUNTRIES

Latin America, special focus in Colombia, Costa Rica, Mexico and Panama

BENEFICIARIES

Mesoamérica and Evolve Management Company

PARTNERS

ECS Consultores

FUNDER

IDB Invest

IMPACT

ORGANISATIONS ENGAGED

Over 45 stakeholders across public and private sectors, including financial institutions, waste management companies, industry associations, and policymakers.

NUMBER OF BENEFICIARIES (EXPECTED)

Over 50,000 estimated indirect beneficiaries from the value chain participants and community members from over 10 priority projects identified in plastics, biomass, and agro-waste with validated business models (e.g., flexible plastic recycling, biogas systems, waste-to-construction materials) targeting a minimum 50% loop closure rate.

RESOURCES CREATED

The Circular Economy Taxonomy, a KPI Framework aligned with environmental, social, and circularity indicators, country-specific value chain maps for plastic and biomass, positive and exclusion lists tailored for CE investment screening, a Performance Framework and Monitoring Readiness tool.

This assessment provided the basis for creating tailored eligibility criteria and a CE taxonomy aligned with international best practices and national taxonomies (e.g., Colombia's Green Taxonomy, Mexico's Sustainable Taxonomy). The SdC introduces a four-tier categorisation system: creation, retention, and recovery of value, plus enabling services. It also integrates a Just Transition filter, ensuring projects meet social safeguards such as avoiding child labor, gender discrimination, and health risks.

Additionally, the SdC includes a performance measurement framework with KPIs across environmental and social dimensions. Metrics such as GHG emissions reduction, job creation (disaggregated by gender and youth), and level of circularity (graduality) were defined. This prepares the Fund for long-term impact tracking and investor reporting. The technical assistance delivered in 2024 under the Circular Economy Financing Strategy for the LATAM Circularity Fund has laid a strong foundation for impact-driven investment in CE projects across Latin America.

Future of the project

The next phase will focus on operationalising the CE taxonomy and impact framework within the Fund's investment cycle. The project will provide tools and templates for screening and reporting, strengthen internal capacities of the Fund Manager, and support fundraising and stakeholder engagement by aligning with international CE and ESG standards. The methodology may serve as a model for other regional funds interested in CE-focused investments.

MOBILISED FINANCE (EXPECTED)

Once Fund is operational, USD 100 million in equity and equity-like financing across 8–10 direct investments in LATAM.

POLLUTION REDUCTION (EXPECTED)

Over 1.5 million tons CO_2 reduction per year through circularity (project-level data under validation), and over 300,000 tons of plastic reduction per year.

NUMBER OF NEW JOBS CREATED (EXPECTED)

Thousands of jobs with a focus on vulnerable populations (youth, women, rural workers).

AREA OF WORK:

SUSTAINABLE FINANCE

3.2 SUSTAINABLE BANKING

PROJECTS:

FRAMEWORKS FOR THE PRIVATE BANKING SECTOR IN SOUTH AMERICA

GREEN TAXONOMY OF ECUADOR'S PRIVATE BANKING SECTOR

DEVELOPMENT OF THE INCLUSIVE & SUSTAINABLE FINANCE PROTOCOL FOR SURINAME'S BANKING SECTOR

SUPPORTING BANK'S TRANSITION WITH STRATEGIC ADVISORY AND TOOLS IN LATIN AMERICA

SUSTAINABLE INVESTMENT CLASSIFICATION AND ELIGIBILITY TOOL IN COLOMBIA

GREEN FINANCE LINES AND SMES FINANCE LINES FOR DAVIVIENDA COSTA RICA

SUSTAINABILITY STRATEGY FOR BANCO GALÍCIA IN ARGENTINA

SUSTAINABLE FINANCE

SUSTAINABLE BANKING

FRAMEWORKS FOR THE PRIVATE BANKING SECTOR IN LATIN AMERICA

Setting The Context

As the global economy races to meet Net-Zero targets, financial institutions play a pivotal role in directing capital toward sustainable, low-carbon development. Yet, in many developing countries, banks face fundamental barriers, from a lack of regulatory clarity to limited capacity and misaligned incentives. One of the most pressing needs is the creation of robust, standardised tools that define what qualifies as “green” or “inclusive” finance.

Clear classification systems, such as taxonomies, help distinguish environmentally sustainable activities, enabling financial institutions to allocate capital more confidently and transparently. Likewise, sustainable finance protocols provide banks with actionable frameworks to integrate ESG criteria, assess climate risks, and design inclusive, green or sustainable financial products that support underserved populations. Without such tools, the risk of fragmentation grows, slowing the pace of investment and leaving vulnerable economies behind in the global transition. By advancing these foundational instruments, developing countries can accelerate financial system alignment with climate and social goals.

DEVELOPMENT OF THE GREEN TAXONOMY OF ECUADOR'S PRIVATE BANKING SECTOR

PERIOD

2023 - 2024

COUNTRIES

Ecuador

PARTNERS

Asobanca (the Association of Private Banks of Ecuador)

FUNDER

IDB Invest

Ecuador's rich ecosystems, from the Amazon rainforest to the Andean highlands and Pacific coast, are increasingly threatened by climate change. Melting glaciers jeopardise water security, while rising sea levels and stronger tropical storms impact coastal communities, fisheries, and tourism. Meanwhile, deforestation driven by human activities endangers the Amazon's critical biodiversity.

Recognising the strong link between environmental sustainability and financial stability, Ecuador's private financial institutions are emerging as important agents of change. Asobanca, the Association of Private Banks of Ecuador, has been instrumental in promoting green finance. In 2016, **Asobanca** led the signing of the Sustainable Finance Protocol, establishing a national framework to align private sector finance with sustainable development, placing Ecuador among the first six countries in Latin America to do so.

However, a major barrier to scaling sustainable finance is the lack of clear definitions around what constitutes "green." To address this, Asobanca has lead this groundbreaking initiative, the development of a Green Taxonomy to bring clarity and transparency to the private financial sector.

Review of 2024

The Inter-American Development Bank (IDB) and its private sector arm, **IDB Invest**, recognise the importance of categorisation frameworks for identifying sustainable economic activities. They engaged BASE to provide technical assistance to Asobanca and its affiliates.

The Green Sectoral Taxonomy was developed through a collaborative and interdisciplinary process, led by the BASE team of international and Equatorian experts with the support of Asobanca. This work was informed by international best practices and involved close consultation with financial institutions, regulatory authorities and the public sector to ensure relevance and applicability.

The Green Sectoral Taxonomy initiative, represents a transformative step toward promoting a more sustainable financial system in Ecuador.

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

14 banks members of Asobanca.

REACH OF CAPACITY BUILDING ACTIVITIES

Over 440 participants accross 6 sessions.

VISIT PROJECT PAGE

Developed with scientific rigour and transparency by BASE, this tool provides a clear classification system to distinguish green credit operations from those that are not, offering an essential framework to support sustainable development across the country's financial sector.

At its core, the Green Sectoral Taxonomy serves as a scientifically based, transparent system for defining and classifying economic activities according to their environmental impact. By establishing clear and scientifically grounded criteria, it ensures that green financing is targeted at activities that have a real positive environmental impact. This classification system not only promotes the alignment of private financial flows with sustainable development objectives but also facilitates access to international green finance. Beyond this, the taxonomy serves as an important stepping-stone toward the creation of a future national taxonomy for Ecuador.

When accessing the **Green Sectoral Taxonomy**, users will find detailed classifications of eligible green activities, organised by economic sector. The tool provides criteria and performance indicators that help financial institutions and other users assess the environmental contribution of different projects.

It encompasses key sectors such as energy, agriculture, forestry, waste management, manufacturing, and more, each evaluated for its alignment with environmental sustainability objectives. It also includes a technical sheet, glossary, and an Excel version to facilitate practical use by stakeholders.

A key element for ensuring the adoption of Ecuador's Green Sectoral Taxonomy was the design and execution of a robust capacity-building program. As part of this initiative, 11 banks from Asobanca actively participated by developing and presenting pilot projects that applied the taxonomy to real or hypothetical lending activities. These academic projects focused on sectors and priorities identified in the taxonomy. This hands-on approach familiarised banks with the taxonomy's requirements and also demonstrated its practical relevance to everyday financial decision-making.

Future of the project

The Green Taxonomy was presented at the Asobanca Sustainable Finance Forum 2024. The video on the project was published **here**.

The project was successfully completed in October 2024.

The taxonomy was presented in February 2025 to the Ecuadorian authorities in the 'Mesa de Finanzas Sostenibles' in the context of the construction of the national taxonomy.

DEVELOPMENT OF THE INCLUSIVE & SUSTAINABLE FINANCE PROTOCOL FOR SURINAME'S BANKING SECTOR

In November 2024, the Suriname Bankers Association (SBV), with support from the IDB Invest, embarked on a groundbreaking initiative to develop an **Inclusive and Sustainable Finance Protocol**.

Review of 2024

The project's first activity focused on **Benchmarking Sustainable Finance**, exploring key insights and emerging trends from five selected countries. Through research and a dedicated workshop, we engaged stakeholders in a dialogue on how Suriname's financial institutions can learn from global best practices, adapt them to the local context, and translate them into actionable strategies. The benchmarking exercise specifically examined trends in four key areas: **green financial products, ESG integration, financial inclusion**, and **digital finance**, offering a well-rounded perspective to inform the development of Suriname's Inclusive and Sustainable Finance Protocol.

The Inclusive and Sustainable Finance Protocol is designed to serve as a practical tool for SBV member banks, guiding the integration of sustainable finance principles across their operations. It will support institutions in setting clear sustainability targets, embedding ESG considerations into lending and investment decisions, assessing and disclosing climate-related risks, and developing financial products that promote resilience and inclusive growth.

As the project progresses, the Protocol will become a strategic roadmap for Suriname's financial sector—helping banks align with national environmental and social goals while enhancing their competitiveness in an increasingly sustainability-driven global economy.

Future of the project

The next phase of the project will focus on assessing climate and sustainability risks across the banking sector and identifying opportunities for green and inclusive financing within Suriname. In parallel, the project will explore the specific financial needs of women, women-led SMEs (WSMEs), and other vulnerable groups.

Efforts will be made to promote financial literacy and inclusion, and to better understand the untapped market potential of serving these segments.

Together, these activities will inform the development of a protocol that is both ambitious and grounded in local realities, positioning Suriname's financial sector to lead in inclusive, sustainable growth.

PERIOD

2024 - 2025

COUNTRIES

Suriname

PARTNERS

Suriname Bankers Association

FUNDER

IDB Invest

ACHIEVED IMPACT

NUMBER OF BENEFICIARIES

11 banks members of Suriname's Bankers Association.

REACH OF CAPACITY BUILDING ACTIVITIES

Around 50 participants across 2 sessions, 4 four planned.

RESOURCES CREATED

An Excel-based MRV Tool prototype, Technical programming manual, a Methodological diagnostic report.

VISIT PROJECT PAGE

SUSTAINABLE FINANCE

SUSTAINABLE BANKING

SUPPORTING BANK'S TRANSITION WITH STRATEGIC ADVISORY AND TOOLS IN LATIN AMERICA

Setting The Context

Climate change continues to pose significant risks to economic development, biodiversity, and social stability across Latin America and the Caribbean (LAC). Governments in the region are increasingly committed to transitioning to net-zero, nature-positive (NZNP) economies. However, financing remains one of the largest obstacles in achieving these ambitions, particularly in high-emission sectors such as construction and infrastructure.

Across Latin America, private financial institutions are increasingly recognising the strategic importance of aligning their operations with environmental and social sustainability goals. Yet, many continue to face practical challenges in measuring impacts, integrating sustainability into core operations, and translating ambitious climate targets into actionable, bankable solutions. In response, financial actors across the region are seeking robust tools and advisory support to navigate this transition.

SUSTAINABLE INVESTMENT CLASSIFICATION AND ELIGIBILITY TOOL IN COLOMBIA

PERIOD

2024

COUNTRIES

Colombia

BENEFICIARIES

Bancoldex

FUNDER

Inter-American Development Bank (IDB)

Review of 2024

As sustainable finance continues to gain momentum in Colombia, the need for robust systems to measure the environmental and social impact of investments has become increasingly critical. Recognising this, **Bancóldex** and the **Inter-American Development Bank (IDB)** have implemented a variety of technical assistance and financing programs aimed at mobilising projects in energy efficiency, clean energy generation, sustainable transport, circular economy, and bioeconomy, among others. However, these efforts have also highlighted persistent challenges related to the monitoring, reporting, and verification (MRV) of impacts, particularly **in terms of data collection from beneficiaries and the consolidation of aggregated information for internal and external communications.**

Currently, Bancóldex tracks estimated impact indicators for sustainable credit lines deployed through both rediscount mechanisms and direct lending. Nevertheless, there remains a **gap in the ability to monitor these indicators once projects are implemented**, limiting the Bank's ability to assess actual outcomes.

To address this, Bancóldex, with support from the IDB, launched a consultancy aimed at developing **a comprehensive tool tailored to sustainable investments aligned with Colombia's Green Taxonomy**. The tool will streamline data capture, evaluation, and reporting processes, while minimising the burden on final beneficiaries and financial intermediaries. It is being designed to offer a user-friendly experience and ensure high technical reliability in measuring environmental, social, and circular economy impacts.

BASE led the development of this tool, which will support Bancóldex in enhancing **decision-making and transparency in its sustainable finance operations.** By leveraging existing public tools, aligning with national frameworks, and incorporating mechanisms for future adaptability, the MRV system will strengthen the institutional capacity to assess the performance and eligibility of green and circular credits.

ACHIEVED IMPACT

RESOURCES CREATED

Eligibility and calculation tool for Bancóldex credit operations in Energy Efficiency, Renewable Energy and Circular Economy.

In 2024, the consultancy successfully **concluded the development of the Classification and Eligibility Tool** aligned with Colombia's Green Taxonomy and supporting documents.

The support incorporated a comprehensive diagnostic phase, which included a review of existing tools developed by Bancóldex, the IDB, and international institutions such as the European Investment Bank. This was complemented by a detailed analysis of Bancóldex's credit lines and the operational processes underpinning them. The outcome was a set of tailored eligibility criteria and impact indicators grounded in national standards and institutional needs.

The core output of the consultancy was the creation of an Excel-based prototype of the classification and eligibility tool, designed for future integration into Bancóldex's online platform. The tool incorporates dual functionality: first, to determine project eligibility based on predefined criteria, and second, to estimate potential environmental and social impacts through simplified but technically sound calculations. It covers multiple categories, including energy efficiency, renewable energy, sustainable mobility, and circular economy. Specific modules were developed to address each sector, with methodologies for assessing both quantitative metrics, such as energy savings and CO_2 reductions, and qualitative indicators, including social inclusion and transition justice.

Additionally, a detailed programming manual was delivered to guide the future digitalisation of the tool. The manual outlines the logic, formulas, eligibility thresholds, and user experience design, ensuring seamless platform integration and long-term adaptability. The tool was tested with pilot cases and received positive feedback for its clarity and alignment with institutional requirements.

Future of the project

The next phase focuses on its digitalisation and integration into Bancóldex's online platform. This step is expected to significantly streamline the credit application process for clients and financial intermediaries, while also facilitating the collection of standardised impact data. By embedding the tool into the digital infrastructure of Bancóldex, users will benefit from a more intuitive experience, automated calculations, and simplified data submission, ultimately enhancing access to sustainable financing.

BASE remains in close contact with both Bancóldex and the IDB to support the transition from the Excel prototype to a fully operational digital platform. This collaboration will ensure that the functionalities developed during the consultancy, such as eligibility checks, impact assessments, and circularity evaluations, are accurately translated into a scalable, user-friendly system. The digital MRV tool is expected to become a central element in Bancóldex's strategy to promote transparency, efficiency, and impact-driven decision-making within its sustainable finance portfolio.

GREEN FINANCE LINES AND SMES FINANCE LINES FOR DAVIVIENDA COSTA RICA

PERIOD

2023-2024

COUNTRIES

Costa Rica

PARTNERS

Banco Davivienda Costa Rica, Green Building Council Costa Rica

FUNDER

IDB Invest

Review of 2024

BASE supported **Banco Davivienda Costa Rica** in developing its green finance strategy, with technical assistance from IDB Invest. The objective was to design a portfolio focused on renewable energy, sustainable construction, electromobility, and SMEs which are key areas aligned with Costa Rica's sustainability goals.

Based on the findings from the market study carried out, BASE helped Davivienda design tailored green financial products and a strategy to trace, segment, and monitor a high-impact thematic portfolio. In-person workshops in Costa Rica (June 2023, April 2024) trained over 60 staff from key departments, including business banking, risk, HR, and finance. These sessions focused on co-creating value propositions, understanding client needs, and designing products with sustainability and inclusion in mind.

Examples of workshop outcomes included:

- Co-designing the strategy for the SME and Women-led SME segments.
- Co-creating financial and non-financial value offers tailored to these segments.
- Identifying opportunities and addressing gaps in the current management model.
- Designed a financial product for the bank.

A key deliverable was the Thematic Portfolio Management System ("Sistema de Gestión de Cartera Temática"), which offers a practical roadmap for tagging, segmenting, and monitoring green investments. It defines eligibility criteria, operational structures, and data flows to ensure full integration across the bank.

The project also fostered collaboration with strategic allies like the Green Building Council Costa Rica and BID Invest to align market opportunities with technical and financial tools.

ACHIEVED IMPACT

REACH OF CAPACITY BUILDING ACTIVITIES

Around 60 employees trained through workshops.

Future of the project

The project provided Davivienda with a solid framework to scale green finance. Its internal systems, staff training, and product prototypes position it to lead Costa Rica's banking sector in climate action. The tools and roadmap developed are designed for replication and long-term sustainability.

CLIMATE AND SUSTAINABILITY STRATEGY FOR BANCO GALÍCIA IN ARGENTINA

PERIOD
2023-2024

COUNTRIES
Argentina

PARTNERS
Banco Galícia

FUNDER
IDB Invest

Review of 2024

In 2024, BASE continued its support to Banco Galicia in implementing a climate and sustainability strategy developed in partnership with IDB Invest. The strategy aimed to align the bank's operations and portfolio with international Net Zero frameworks, including the TCFD, IFRS S2, and the Net-Zero Banking Alliance (NZBA).

The project began with a comprehensive diagnostic aiming to assess the carbon footprint and climate exposure of the bank portfolio. This informed a tailored roadmap that considered both global best practices and Argentina's evolving regulatory and macroeconomic context. A financial instrument along a comprehensive sustainability strategy was developed, looking at integrating climate risk into credit assessments and refining its internal climate metrics and disclosures.

BASE worked closely with risk, credit, and commercial teams to embed climate criteria across business lines. Over 35 staff members were trained through targeted workshops.

This framework provides a guide to internal action and track ESG progress. Key steps were taken toward measuring and disclosing financed emissions, and interim targets were drafted for high-emitting sectors. A mission to Argentina took place on June 26 and 27, 2024.

Future of the project

Banco Galicia formalised their emissions targets, positioning itself as a sustainability leader in the local financial sector.

ACHIEVED IMPACT

REACH OF CAPACITY BUILDING ACTIVITIES

35 staff members.

AREA OF WORK:

SUSTAINABLE FINANCE

3.3 INNOVATIVE FINANCING MECHANISMS

PROJECTS:

GCF PROPOSAL - LEBANON GREEN INVESTMENT FACILITY (LGIF)

GREEN CREDIT GUARANTEE FUND FOR SMES IN PERU

GREEN COMPLETION GUARANTEE FOR ENERGY-EFFICIENT HOUSING IN KAZAKHSTAN

GLOBAL METHANE SOLUTIONS PROGRAMME

SUSTAINABLE FINANCE

BASE

INNOVATIVE FINANCING MECHANISMS

GCF PROPOSAL - LEBANON GREEN INVESTMENT FACILITY

VISIT PROJECT PAGE →

Setting the Context

Situated along the eastern coast of the Mediterranean Sea, Lebanon is a densely populated, urbanised nation that has grappled with many economic and humanitarian challenges in recent years. These adversities have resulted in significant economic shortfalls and increased financial strain on the government, the private sector and its population to opt for sustainable development pathways.

In tandem with these difficulties, Lebanon is confronted with escalating consequences of climate change, including heatwaves, droughts, wildfires, and storms. The widespread dependence on generators running on fossil fuels exacerbates the emission of greenhouse gases like carbon dioxide into the atmosphere. Even against this tumultuous backdrop, Lebanon is trying to improve its environmental responsibilities. In collaboration with the UNDP's **Climate Promise initiative**, the country has revised its Nationally Determined Contributions (NDCs) and established ambitious goals. These goals encompass a 20 percent reduction in greenhouse gas emissions compared to baseline projections and a substantial increase in the use of renewable energy sources in the electricity and heating sectors by 2030. The updated NDCs also incorporate a comprehensive adaptation strategy that prioritises measures such as agricultural resilience, sustainable resource management, and nature-based solutions to mitigate the impacts of climate change and safeguard public health.

This project aims to assist the Lebanese government in establishing the **Lebanon Green Investment Facility (LGIF)** in partnership with UNDP Climate Promise 2.0. It involves developing a robust **Green Climate Fund (GCF)** Funding Proposal package (FP) to mobilise concessional funds from the GCF for LGIF. The objective is to enable Lebanon to achieve its NDCs through private sector investment and a blended finance approach.

Lebanon's low credit rating from international agencies, compounded by the government's default on international loan payments in 2020, has limited the private sector's access to finance. The fragile state of the banking sector and the halting of development funding have made investing in green and sustainable ventures very challenging. Lebanon's private sector has showcased resilience, adaptability, and innovation in manoeuvring through this difficult environment, striving to maintain operations despite the numerous challenges.

PERIOD

2023-2025

COUNTRIES

Lebanon

PARTNERS

UNDP Lebanon, Cedar Oxygen, OTB Consult

FUNDER

NDC Partnership

EXPECTED IMPACT

FINANCE MOBILISED

The funding proposal developed with support of BASE via the NDC partnership targets a total programme size of 107 m USD composed of the following:

- *GCF Loan: USD 25 mn*
- *GCF TA: USD 7 mm*
- *Co-funding: USD 75 mn*
- *Parallel financing: USD 33 mn.*

ORGANISATIONS ENGAGED

Ministry of Environment, GCF MENA representative, National Commission For Lebanese Women (NCLW).

EMISSION REDUCTION

1.9 million tCO_2eq over the LGIF lifetime.

Given the limited public funds, withdrawal of most international donors and a strained financial system, LGIF strives to emerge as a pivotal force and investor in climate change mitigation and adaptation for the country. Its objective is to stimulate climate financing to facilitate Lebanon's energy transition by providing financial resources and a private-sector driven mechanism to support the country's industrial and commercial sectors in accessing finance to meet the country's low emission and climate resilient development targets.

Review of 2024

In 2024, BASE collaborated with Lebanon-based OTB Consult to co-develop a full Green Climate Fund (GCF) Funding Proposal for the **Lebanon Green Investment Facility (LGIF)**, a pioneering climate finance programme designed to respond to Lebanon's national needs and institutional realities. The proposal was prepared with critical input from **UNDP Lebanon**, the **Ministry of Environment**, and **Cedar Oxygen**, ensuring close alignment with Lebanon's climate priorities and the GCF's investment criteria.

The proposal outlines a comprehensive, locally grounded strategy to unlock private sector investments in low-carbon and climate-resilient infrastructure. It features a strong focus on inclusive development and gender-responsive action. The design process emphasized the inclusion of **marginalized populations**, including women and refugees, with the goal of ensuring that Lebanon's green recovery benefits all segments of society.

Key deliverables developed during the year included:

- A full **feasibility study** and market assessment supporting the programme's investment rationale;
- An **Environmental and Social Management System (ESMS)** aligned with international best practices;
- A detailed **Gender Assessment and Action Plan**;
- Stakeholder consultations across public, private, and civil society actors, adapted for remote engagement.

Due to the ongoing regional security crisis, BASE and partners conducted all activities remotely, engaging stakeholders through virtual interviews and technical workshops. The investment pipeline, designed by Cedar Oxygen and reviewed by BASE, was informed by market intelligence and structured to meet the programme's climate and development goals.

BASE also supported Cedar Oxygen throughout the **Project-Specific Assessment Approach (PSAA)** process with the GCF Secretariat, helping refine the proposal's logical framework, climate rationale, and expected results to ensure alignment with GCF funding requirements.

CLEAN ENERGY GENERATION

532 GWh renewable energy generated (over project period) from 0.13 MW of new installed solar PV capacity, and 0.89 MW Installed energy storage capacity.

NUMBER OF NEW JOBS CREATED

4421

The LGIF proposal aligns with three GCF result areas:

- Energy generation and access
- Health, well-being, food and water security
- Buildings, cities, industries and appliances

Projects financed through LGIF are designed to generate measurable mitigation outcomes, particularly through renewable energy and energy efficiency investments, while also delivering strong adaptation co-benefits. These include improved service delivery in the healthcare, agriculture, and industrial sectors, which are especially vulnerable to climate impacts.

As Lebanon's first institutional climate fund, LGIF is expected to play a catalytic role in mobilizing private finance, addressing long-standing investment barriers, and contributing to the country's **Nationally Determined Contributions (NDCs)**.

By enabling climate-aligned economic recovery, the programme supports Lebanon's broader goals of resilience, sustainability, and inclusive growth.

Future of the project

With core sections of the LGIF funding proposal and annexes completed in 2024, the project will move into its final development phase in early 2025. In the first quarter, the proposal will be finalized, incorporating technical inputs and documentation prepared throughout the year.

A final consultation round is planned for Q2 2025, led by UNDP Lebanon and Cedar Oxygen in coordination with the Ministry of Environment and key stakeholders. These discussions will help refine the proposal, ensure alignment with national priorities, and prepare for validation.

Following validation, the project will be submitted to the Green Climate Fund under the Project-Specific Assessment Approach (PSAA), with the aim of reaching Board consideration by late 2025 or early 2026.

SUSTAINABLE FINANCE

INNOVATIVE FINANCING MECHANISMS

GREEN CREDIT GUARANTEE FUND FOR SMES IN PERU

VISIT PROJECT PAGE

Setting The Context

Small and medium enterprises (SMEs) play a vital role in Peru's economy, yet many face difficulties accessing financing to invest in green technologies that enhance environmental sustainability and energy efficiency. Financial institutions often hesitate to lend to SMEs for green investments due to perceived risks, lack of collateral, and uncertainty about returns. To address this challenge, the Green Credit Guarantee Fund for SMEs in Peru was launched in November 2018 under the **Green Credit Trust Fund (GCTF)** initiative, financed by the **Swiss State Secretariat for Economic Affairs (SECO).**

The Fund aims to facilitate access to finance for Peruvian SMEs by providing a risk mitigation mechanism called the Green Credit Partial Guarantee. This mechanism reduces lenders' risk exposure, encouraging them to extend credit for environmentally beneficial projects. The initiative operates exclusively in Peru, supporting SMEs in acquiring finance for efficient technologies that contribute to sustainable development and climate action goals.

The Fund is managed locally by **FOGAPI**, a non-profit organisation experienced in guarantee fund management, while advisory and technical design support is provided by BASE, along with consultants Andreas Pecnik and Manuel Humberto Luque Casanave. Key international partners include the **Inter-American Development Bank (IDB)** and the **United Nations Environment Programme (UNEP).**

For the past two years, BASE has been collaborating with SECO to provide advisory services for the development and implementation of a partial credit guarantee, aimed at helping SMEs access financing for green solutions.

Review of 2024

The year 2024 marked a critical phase where the project transitioned from design and structuring towards implementation and scaling. With continued guidance and advisory support from BASE, FOGAPI completed the definition of eligibility criteria for the green taxonomy, which helps the identification of projects that can benefit the environment.

PERIOD

2018-2024

COUNTRIES

Peru

PARTNERS

Inter-American Development Bank (IDB), United Nations Environment Programme (UNEP)

FUNDER

Swiss State Secretariat for Economic Affairs (SECO)

EXPECTED IMPACT

NUMBER OF BENEFICIARIES

36 guarantee issuances to be distributed across 3 banks.

The team also finalised the Measurement, Reporting, and Verification (MRV) tool, a system designed to monitor and evaluate the environmental and social impacts of the projects financed under the guarantee fund.

Additionally, FOGAPI completed the commercial strategy aimed at driving engagement with financial institutions across Peru. This strategy provided the framework to encourage banks and credit unions to widely adopt the green guarantee product. A **web platform** was also created to effectively promote the solution.

The year also saw the launch of initial pilot implementations of both the MRV system and the commercial strategy. These pilots served as practical tests, allowing FOGAPI to refine processes, gather early results, and build confidence among stakeholders.

Future of the project

With the established financial and technical infrastructure, 2025 will see the implementation of the guarantee in the Peruvian market. The fund aims to boost green SME investments in Peru through an innovative design with risk-based pricing and a strong MRV framework. The fund model serves as a blueprint for similar interventions globally, demonstrating how risk mitigation mechanisms can be structured to encourage private investments in green projects.

SUSTAINABLE FINANCE

INNOVATIVE FINANCING MECHANISMS

GREEN COMPLETION GUARANTEE FOR ENERGY-EFFICIENT HOUSING IN KAZAKHSTAN

VISIT PROJECT PAGE

Setting The Context

Kazakhstan's housing sector faces urgent and intertwined challenges: how to meet increasing demand for affordable housing, while significantly reducing the environmental impact of new construction. As of 2023, the country recorded **12.6 metric tonnes of CO_2 emissions per capita**, nearly **twice the average in Europe**. Rapid urbanisation and a strong reliance on inefficient, coal-powered district heating systems amplify this challenge.

While government-led green mortgage schemes signal growing institutional support for sustainable housing, market adoption of energy-efficient buildings remains low. A major bottleneck lies in the lack of robust risk-mitigation mechanisms that can give financial institutions and home-buyers confidence in the promised performance of green buildings, combined with weak enforcement of existing energy-efficiency regulations, so that, in practice, many new projects still fail to meet minimum standards, especially for critical elements such as thermal insulation. In this context, BASE collaborated with the **Asian Development Bank (ADB)** and a team of experts to design and propose a novel financial instrument: the **Green Completion Guarantee**.

The Guarantee is conceived as a tool to reinforce trust in energy performance standards in residential construction and to de-risk investments in green buildings. It aligns with the national green finance strategy and international frameworks such as SDG 11 (Sustainable Cities and Communities) and the climate goals of COP28.

Review of 2024

Throughout 2024, BASE served as the risk-mitigation partner in an ADB-led initiative supporting the **Kazakhstan Housing Company (KHC)**. The project's overarching goal was to develop a replicable model for affordable, energy-efficient residential buildings that could be mainstreamed across Kazakhstan. BASE's primary contribution focused on designing the **Green Completion Guarantee** as an integrated component of this model.

The proposed instrument builds upon the existing Construction Completion Guarantee offered by KHC. However, it introduces additional performance-based criteria focused on energy efficiency. These include independent validation of construction quality related to thermal insula-

PERIOD

2023-2024

COUNTRIES

Kazakhstan

PARTNERS

Kazakhstan Housing Company (KHC)

FUNDER

Asian Development Bank (ADB)

IMPACT

ORGANISATIONS ENGAGED

Over 45 stakeholders including ADB, KHC, Association of Financiers of Kazakhstan, Kazakhstan Green Building Council, International Finance Corporation, Association of Builders of Kazakhstan, validation entities, Association of Financiers of Kazakhstan Swiss Re, local commercial banks and insurance & re-insurance companies.

REACH OF CAPACITY BUILDING ACTIVITIES

More than 80 participants across two national workshops and several targeted bilateral meeting.

RESOURCES CREATED

A Green Completion Guarantee mechanism, including validation protocols, compensation mechanism, and a legal framework.

CO_2E EMISSIONS REDUCTION (EXPECTED)

Around 200 tonnes expected per pilot over 15 years per green affordable building, based on a referential building design.

tion, airtightness, and heating systems. The mechanism also incorporates building certification schemes, like the **OMIR** and the international **EDGE**, ensuring consistency with recognised standards.

BASE led the conceptual design of the guarantee. This included:

- Proposing technical validation protocols and performance benchmarks
- Designing a tiered compensation mechanism triggered by underperformance
- Outlining the legal amendments needed to embed the green component within the existing KHC framework

Consultations were held with over 45 stakeholders, including banks, insurers, reinsurance companies, developers, certification entities, and public officials. Two national workshops, co-hosted with the **Association of Financiers of Kazakhstan**, enabled feedback collection and buy-in from the financial and construction sectors.

Parallel discussions with international reinsurers provided valuable market intelligence. Some of these institutions confirmed their preliminary interest in supporting the Guarantee through reinsurance, contingent on the establishment of a robust monitoring and verification framework. This validation strengthens the instrument's credibility and future scalability.

Despite this progress, the ADB and its technical team were unable to identify a suitable plot of land for piloting the building design within the project timeframe.

This limited the ability to test the Guarantee in real-world conditions. However, capacity building around the instrument and its potential integration into national housing programmes advanced significantly.

Future of the project

The groundwork is laid for rolling out the Green Completion Guarantee. Its next chapter hinges on two practical steps. First, KHC must decide to integrate the guarantee into its portfolio and enact the modest legal tweaks required to extend its existing completion-guarantee scheme to cover energy-performance risk. Second, an appropriate pilot site must be secured, an opportunity to showcase how stricter quality checks and independent validation translate into lower energy bills and higher living standards.

Once these pieces are in place, the Green Completion Guarantee can move from blueprint to building site. In short, the mechanism is shovel-ready. With KHC's endorsement and a pilot project on the horizon, the Green Completion Guarantee could become a flagship tool, de-risking investment, accelerating the scale-up of energy-efficient housing, and setting a new benchmark for sustainable construction across Kazakhstan.

SUSTAINABLE FINANCE

BASE

INNOVATIVE FINANCING MECHANISMS

GLOBAL METHANE SOLUTIONS PROGRAMME: ACCELERATING INVESTMENT SOLUTIONS FOR METHANE REDUCTION THROUGH A FOOD SYSTEMS AND WASTE MANAGEMENT APPROACH

Setting The Context

Methane is a potent greenhouse gas, over 80 times more powerful than carbon dioxide over a 20-year period. It accounts for over 20 percent of global GHG emissions and is a major driver of near-term climate change. The **Global Methane Reduction Programme**, led by **United Nations Environment Programme (UNEP)** and supported by the **Green Climate Fund (GCF)**, responds to this urgent climate priority by accelerating methane abatement in food systems and waste management, two of the highest-emitting sectors in many developing countries.

The programme addresses gaps in financing, policy, and technical capacity by combining a Technical Assistance Facility and regional Investment Facilities. This dual-track model supports countries in developing enabling environments, scaling up solutions, and de-risking investments. It contributes directly to the objectives of the Global Methane Pledge, which aims to cut methane emissions by at least 30 percent by 2030.

Review of 2024

In 2024, the Programme reached major design and consultation milestones:

- **GCF Concept Note Finalised:** The programme concept note was completed in collaboration with UNEP and key partners and submitted to the Green Climate Fund in September. The concept outlines four interconnected components: enabling conditions, innovation pipeline development, global knowledge management, and regional investment facilities.
- **Market and Feasibility Study Conducted:** A comprehensive feasibility study was undertaken to assess investment needs, technology readiness, and market opportunities in Brazil, Indonesia, and Morocco. These countries serve as pilot regions to inform the design of investment facilities. The study mapped financial instruments, assessed risks, and identified over a dozen methane reduction technologies with investment potential, including rice intensification, slurry acidification, and cold chain infrastructure.
- **Investment Opportunity Mapping:** A preliminary list of project ideas was developed based on technology maturity, commercial viability,

PERIOD

2023-2024

COUNTRIES

Africa: South Africa, Ghana, Kenya, Morocco

Asia: Indonesia, Thailand

Latin America and the Caribbean: Brazil, Argentina, Peru, Chile, Colombia, Mexico

PARTNERS

UNEP, Financial Institutions, national governments

CLIENT

UNEP-CCAC (Climate and Clean Air Coalition)

EXPECTED IMPACT

NUMBER OF BENEFICIARIES

At least 6 countries to receive support in improving methane-related data systems, institutional capacity, and policy frameworks. At least 5 regional peer-learning events annually.

PILOTS

15 pilot projects funded via seed grants and reimbursable finance instruments. 20+ innovative methane-reducing technologies supported through incubation hubs.

RESOURCES CREATED

A knowledge platform with over 100 learning materials, case studies, and tools.

FINANCE MOBILISED

USD 56 million in GCF funding expected to leverage an additional USD 30 million from public and private sources. Facilities target a 1:1 co-financing ratio, with over 30 investment-ready methane mitigation projects expected by Year 4.

and methane mitigation potential. These include black soldier fly farms, digestible cattle feed solutions, waste-to-energy initiatives, and digital tools for food waste monitoring.

- **Stakeholder Consultations:** National-level consultations were conducted with government institutions, development banks, and local businesses to validate priorities and confirm interest. Discussions informed the design of credit lines, selection of fund managers, and co-financing strategies.
- **Integration with International Initiatives:** The Programme was aligned with efforts of the Global Methane Hub, CCAC's Methane Roadmap Action Programme (MRAP), and IMEO. CCAC and IMEO will play critical roles in data monitoring, policy advocacy, and knowledge sharing platforms.

CO_2E EMISSIONS REDUCTION

18 percent reduction in methane emissions below business-as-usual in pilot regions by 2030. Improved air quality is expected to prevent up to 255,000 premature deaths annually.

Future of the project

With concept validation complete, the next phase in 2025 will focus on:

- **Full Funding Proposal to GCF:** UNEP and partners aim to submit the full funding proposal to the GCF by mid-2025. This will include detailed financial and implementation arrangements, confirmed co-financing, and safeguards documentation.
- **Facility Operationalisation:** The establishment of investment facilities in Brazil, Indonesia, and Morocco is planned. Each facility will be tailored to the country context and managed by national or regional financial institutions capable of deploying blended finance instruments.
- **Pilots and Incubation Hubs:** Calls for proposals will be launched to select methane mitigation pilot projects. These will be supported through technical assistance, seed funding, and MRV tools. Regional incubation hubs will be established to mentor startups and SMEs.
- **Knowledge and Capacity Building:** A global platform will be launched in partnership with universities, IMEO, and CCAC to disseminate lessons learned, track impacts, and host peer learning exchanges.
- **Scaling and Replication:** Based on the pilot results, additional countries will be onboarded. The Programme will develop a roadmap for scaling interventions and integrating methane mitigation into national investment plans.

04

AREA OF WORK

SUSTAINABLE TRANSPORT AND MOBILITY

AREA OF WORK:

SUSTAINABLE TRANSPORT AND MOBILITY

4.1 ENABLING ELECTRIC MOBILITY

PROJECTS:

DEVELOPING A FINANCING FUND FOR EV'S CHARGING INFRASTRUCTURE

SCALING UP ELECTRIC BUSES IN GHANA

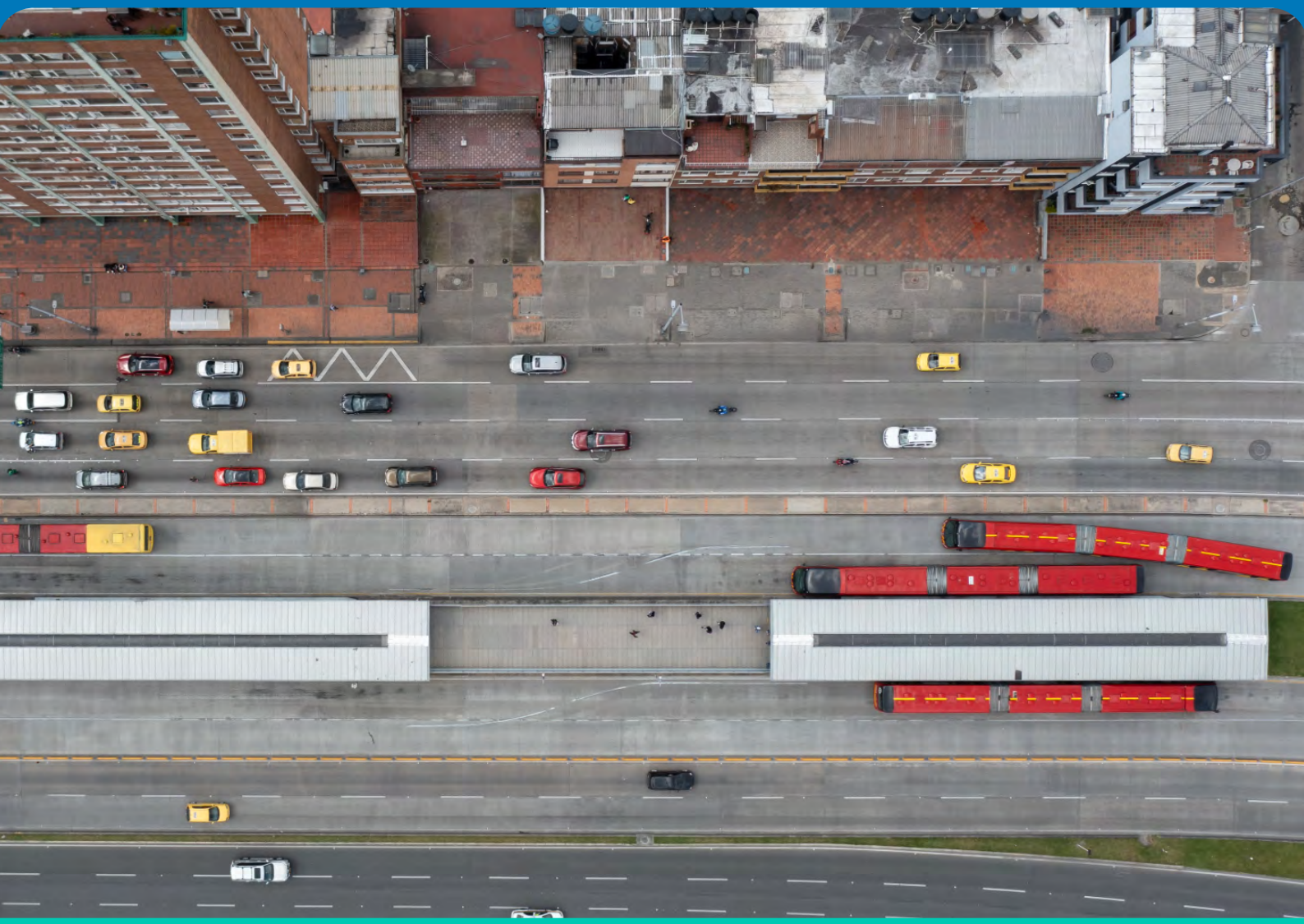
ELECTRIC AND BIOGAS GARBAGE TRUCKS IN DOMINICAN REPUBLIC

SUSTAINABLE TRANSPORT AND MOBILITY

BASE

ENABLING ELECTRIC MOBILITY

DEVELOPING A FINANCING FUND FOR EV'S CHARGING INFRASTRUCTURE



Setting The Context

The global transition toward sustainable mobility has positioned electric vehicles (EVs) as a critical solution for reducing emissions in the transport sector. In line with this movement, Colombia has demonstrated a strong commitment to advancing electromobility, establishing itself as a regional leader through progressive policies and national strategies aimed at decarbonising transportation.

A key challenge in scaling up electric mobility in the country has been the development of reliable, accessible, and sustainable charging infrastructure. Recognising this, the Government of Colombia launched the **National Electric Mobility Strategy** in 2019, led by the **Ministry of Environment and Sustainable Development**, the **Ministry of Mines and Energy**, the **Ministry of Transport**, and the **Mining and Energy Planning Unit (UPME).** One of the strategy's core objectives was to identify concrete actions to facilitate the nationwide deployment of EV charging infrastructure.

To support these goals, the **World Bank** commissioned a technical assistance initiative aimed at strengthening Colombia's ability to deploy EV charging networks effectively and cost-efficiently. **Deloitte**, with the participation of BASE, was awarded the contract, with the overall objective of developing a comprehensive strategy and actionable roadmap to enable the large-scale implementation of EV charging infrastructure.

The assessment focused on intermediate cities and national highways and included both public and private energy supply infrastructure, while also exploring pathways for concessional and non-concessional financing.

BASE was contracted by Deloitte to provide specialised advisory support under Task 2, focused on business model development and financial mechanism design.

The consultancy included the following components: 1) assessment of the technical and economic feasibility of EV charging infrastructure and the introduction of incentives for EV adoption; 2) business model development and financial mechanism design; 3) translation of international best practices into a practical framework for Colombia.

PERIOD

2023-2024

COUNTRIES

Colombia

PARTNERS

Deloitte

FUNDER

World Bank

IMPACT

ORGANISATIONS ENGAGED

Engaged over 15 national funds and multiple public sector institutions, including the Ministry of Finance, Ministry of Energy and Mines, Ministry of Transport, UPME, DNP, and ART. Consultations also involved legal experts, technical advisors, and private sector stakeholders.

NUMBER OF INDIRECT BENEFICIARIES (ESTIMATE)

At least 6 countries to receive support in improving methane-related data systems, institutional capacity, and policy frameworks. At least 5 regional peer-learning events annually.

FINANCE MOBILISED (ESTIMATE)

Potential investment need of USD 263 million identified, with USD 141 million expected to come from public sources as non-reimbursable contributions.

RESOURCES CREATED

7, including the design of the Fondo de Infraestructura de Recarga Pública (FIRP), Governance and legal structure proposal, Investment roadmap and phased deployment model, Financial viability matrix of 15 national funds, EV charging tariff model (slow and fast), Staged procurement mechanism based on international best practice, Legal and regulatory analysis for fund alignment.

BASE's work under task 2 included two key deliverables:

1. A technical analysis of the needs, opportunities, and challenges associated with establishing a dedicated financial mechanism. This included:
    - Identification of existing and potential sources of funding for EV infrastructure;
    - Estimation of required financial contributions to ensure the sustainability of infrastructure projects;
    - Evaluation of the relevance and potential impact of various financial mechanisms in the Colombian context.
2. A detailed proposal for the operational model of a financial mechanism. This outlined high-level technical, legal, governance, and financial requirements and included a stakeholder engagement process.

Review of 2024

The core output of the year was the proposal of the Public Charging Infrastructure Fund (*Fondo de Infraestructura de Recarga Pública*, FIRP), a dedicated public fund aimed at mobilising blended finance for EV charging infrastructure. The team defined the FIRP's investment strategy, governance model, legal structure, and operational deployment plan. Under a conservative scenario, the consultancy estimated a total investment need of USD 263 million, with USD 141 million (54 percent) expected as public co-financing. This investment would enable the deployment of over 19,000 charging points, supporting Colombia's national EV penetration target of 3 percent by 2030.

A detailed screening of 15 existing national funds was conducted to assess the possibility of "housing" the FIRP within an existing public fund. The assessment concluded that while no fund fully aligns with FIRP's objectives and scope, at least three funds, *Fondo para la Vida y la Biodiversidad*, FONDES, and *Colombia Potencia Mundial de la Vida*, offered a viable basis for integration via subaccounts.

In parallel, the consultancy developed a staged deployment mechanism inspired by international best practices such as India's FAME program. This mechanism includes a centralised purchasing system and three investment rounds (2025, 2028, and 2030) to reduce costs through economies of scale. The mechanism considers diverse project typologies and geographic prioritisation for hubs, highways, and cities.

The team also performed technical and legal analyses on alternative funding sources. These included the *Obras por Impuestos* mechanism (limited to certain territories), fuel subsidy reallocation, and carbon tax revenues. Notably, the redirection of fuel subsidies could cover 35 percent to 81 percent of the public co-financing required. The carbon tax could potentially fund up to 50 percent, assuming 10 percent of annual revenues are allocated over five years.

Lastly, a preliminary tariff model was developed to ensure financial sustainability for both fast and slow charging services. The study emphasised that public support remains essential in the early phases of infrastructure deployment until a critical mass of EVs generates sufficient private-sector interest and profitability.

Future of the project

The results of the consultancy were well received by key stakeholders, including government institutions, development partners, and private sector representatives. The proposed design of the Fondo de Infraestructura de Recarga Pública (FIRP), along with the recommended financial mechanisms, governance structure, and investment strategy, generated constructive feedback and broad recognition of the fund's potential to catalyse Colombia's EV infrastructure rollout.

Looking ahead, the next critical step is for the relevant authorities to formally review the proposals submitted and determine the institutional and legal pathway for implementation. This will involve selecting whether to integrate FIRP into an existing fund structure (housing) or initiate the creation of a new financial instrument.

Entering the structuring phase will require detailed legal validation, confirmation of the fund's hosting arrangement, and development of fiduciary, procurement, and disbursement frameworks. It will also involve stakeholder coordination, securing seed capital, and advancing regulatory reforms where needed (e.g. classification of EV charging as public infrastructure).

The momentum built in 2024 now places Colombia in a strong position to move from planning to implementation and unlock scalable investment in sustainable transport infrastructure.

BASE

SUSTAINABLE TRANSPORT AND MOBILITY

ENABLING ELECTRIC MOBILITY

SCALING UP ELECTRIC BUSES IN GHANA

VISIT PROJECT PAGE →

Setting The Context

Ghana, a rapidly growing economy in sub-Saharan Africa, faces significant environmental challenges from its transport sector, which accounts for 45 percent of fuel combustion emissions and 13 percent of national greenhouse gas (GHG) emissions, with buses contributing over a fifth of road transport emissions and 17 percent of PM2.5 emissions (2016 data).

Urbanisation, with the majority of the population in urban areas in 2020, particularly in Accra, Kumasi, Sekondi-Takoradi, and Tamale, amplifies these issues. Ghana's Nationally Determined Contributions (NDCs) aim for a 15 percent GHG emission reduction by 2030, supported by strategies such as vehicle electrification, restricting older vehicle imports, and increasing public transport use by 10 percent in major cities.

With an electricity access rate above 80 percent and excess power capacity of 1,030 MW (2021), Ghana is well-positioned for electric vehicle (EV) adoption. The **United Nations Environment Programme (UNEP)** eBus Ghana project aligns with these goals by providing technical assistance to transition Accra's bus fleet to electric buses (e-buses), addressing climate change and air quality challenges.

Review of 2024

In 2024, the UNEP eBus Ghana project achieved significant milestones toward deploying e-buses in Accra. Following the May 2023 mission, the project team comprising UNEP, **UNEP Copenhagen Climate Centre (CCC)**, and BASE completed financial and economic analyses to ensure project bankability. Consultations with **Metro Mass Transit Limited (MMTL)** and **Ghana Private Road Transport Union (GPRTU)** addressed data gaps, informing a business model and proposing a USD 30 million concessional credit line for e-bus procurement and operations, plus a USD 10 million grant for technical assistance and incentives.

Another key activity was the establishment of the eMobility Policy Working Group (PWG), in collaboration with UNEP and the Regional Centre for Energy and Environmental Sustainability (RCEES). The PWG, comprising over 15 organisations including the Ministry of Energy, Energy Commission, Ministry of Finance, and Ghana Standards Authority, serves as a strategic advisory body to operationalise the National EV Policy. Its inaugural meeting outlined a phased approach (2024–2045) and estab-

PERIOD

2023-2024

COUNTRIES

Ghana

PARTNERS

UNEP Copenhagen Climate Centre (UNEP-CCC), Regional Centre for Energy and Environmental Sustainability (RCEES), UNEP Sustainable Mobility Unit (UNEP-SMU)

FUNDER

United Nations Environment Programme (UNEP)

IMPACT

RESOURCES CREATED

A market assessment and financial analysis for the implementation of 75 electric buses in Accra.

lished four Special Interest Groups (SIGs): Regulations and Guidelines, Finance and Logistics, Awareness and Capacity Building, and Infrastructure Development. The PWG's operational framework, supported by bi-monthly meetings and a digital platform for information sharing, enhances stakeholder coordination and policy alignment.

Another milestone was the Ghanaian delegation's technical tour to Dakar, Senegal, from September 29 to October 3, 2024, organised by UNEP with CTCN and UNEP-CCC support. The tour facilitated knowledge transfer from Senegal's e-Bus Rapid Transit (e-BRT) system, providing insights into low-emission strategies, governance, charging infrastructure standards, and investment models. Hosted by Senegal's **Sustainable Urban Transport Executive Council (CETUD)**, the delegation engaged with the **World Bank, European Investment Bank (EIB)**, and others. The tour informed Accra's e-BRT design, leveraging shared developmental contexts.

The project advanced a dual public-private funding model, prioritising MMTL's needs and engaging private transport providers. Discussions with Ecobank as a potential GCF Accredited Entity for grants and a dual-AE model with UNEP progressed. BASE and RCEES supported the MoT in forming a steering committee to guide the National EV Policy, ensuring long-term sustainability.

Future of the project

The eBus Ghana project is poised for transformative progress in 2025 and beyond, leveraging 2024's momentum and insights from technical support. The PWG will drive policy implementation, with SIGs developing KPIs to track progress in regulations, financing, awareness, and infrastructure.

Building on the technical and financial analysis of the electric buses and the news that around 100 e-buses have recently been deployed in Accra, it is expected that the project has been creating a scalable model for other cities in Ghana and the region. In the long-term, partnerships with global technology providers and financial institutions are expected.

With the workable PWG that includes key public and private national emobility stakeholders, it is expected that policy measures, like EV tax incentives, will accelerate adoption, positioning Accra as a regional e-mobility leader by 2030.

As part of the project, the BASE team accompanied UNEP and a Ghanaian delegation of the ministry of transport to Dakar, Senegal, to learn about and exchange insights on their electric Bus Rapid Transit (eBRT) system, the first of its kind in Africa. The visit offered a unique opportunity to see firsthand how Senegal has progressed to operationalise a first 18-km BRT corridor with around 150 electric buses.

SUSTAINABLE TRANSPORT AND MOBILITY

BASE

ENABLING ELECTRIC MOBILITY

ELECTRIC AND BIOGAS GARBAGE TRUCKS IN DOMINICAN REPUBLIC

VISIT PROJECT PAGE →

Setting The Context

Urban solid waste (USW) management has long been a pressing issue for governments across Latin America and the Caribbean, given its environmental, social, and public health implications. Despite decades of discussion around Integrated Solid Waste Management (ISWM), its successful implementation remains a challenge due to a combination of limited financial and technical resources, rapid urbanisation, shifting consumption patterns, and educational gaps.

In the Dominican Republic, these challenges are particularly acute in high-density urban areas such as Greater Santo Domingo. Here, municipal authorities continue to face difficulties in ensuring efficient and environmentally sound waste storage, collection, and final disposal. Among the stages of waste management, the collection and transport of USW play a critical role in achieving broader sustainability goals. Enhancing these services has therefore become a national and municipal priority.

To address these challenges while supporting the country's climate and sustainability targets, the **Inter-American Development Bank (IDB)** has provided technical assistance to the Solid Waste Unit of the **Ministry of Environment**. This collaboration focuses on promoting cleaner, more efficient waste collection services through the introduction of low and zero-emission transport technologies, specifically electric and biogas-powered garbage trucks.

The project assesses the feasibility of converting the existing USW vehicle fleet in Greater Santo Domingo to run on biogas and electricity, contributing to significant reductions in greenhouse gas (GHG) emissions. A key innovation of the project lies in utilising biogas generated from the Duquesa landfill, the largest in the country, as an energy source. As the site undergoes a gradual closure, biogas capture and use represent a sustainable solution that aligns environmental restoration with improved public service delivery.

This initiative not only supports the transition to cleaner urban infrastructure but also aligns with national objectives related to energy security and fuel independence. By leveraging local renewable resources and advancing circular economy principles, the project aims to position the Dominican Republic as a regional leader in low-emission waste management solutions.

PERIOD

2023-2024

COUNTRIES

Dominican Republic

BENEFICIARIES

Ministry of Environment, Ministry of Tourism and Great Santo Domingo's Town halls (National District and and its seven municipalities)

FUNDER

Inter-American Development Bank (IDB)

IMPACT

ORGANISATIONS ENGAGED

Over 15 organisations, including 4 municipal governments (ADN, ASDE, ASDN, ASDO), Ministry of Environment, Ministry of Energy and Mines, Ministry of Tourism, IDB, Liga Municipal Dominicana, private waste operators, vehicle manufacturers (BYD, FOTON), and energy providers (Evergo, CEPM).

NUMBER OF INDIRECT BENEFICIARIES (ESTIMATE)

Around 3.8 million residents of Greater Santo Domingo stand to benefit from improved public services and cleaner air.

FINANCE MOBILISED (ESTIMATE)

USD 97.4 million estimated for full implementation, including trucks, charging infrastructure, biogas plant, and technical assistance.

Review of 2024

In 2024, the technical assistance provided by the Inter-American Development Bank (IDB) to the Ministry of Environment reached its conclusion, delivering a comprehensive set of technical, financial, and regulatory analyses to support the transition to low-emission solid waste transport in Greater Santo Domingo. Building on the groundwork laid in 2023, the consultancy finalised key components, including operational feasibility, financial viability, business models, and a roadmap for implementation.

A core focus was the evaluation of operational performance for electric and biogas trucks under real-world conditions. Using high-frequency GPS tracking data and MATLAB-based energy simulation tools, the consultancy constructed representative driving cycles for four waste collection routes in the city. These cycles captured variables such as average and peak speeds, number of stops, energy demand during compacting operations, and elevation profiles.

The analysis demonstrated that electric trucks require between 0.6 and 0.9 kWh per kilometer, depending on route topology and load, while compacting operations added an average of 1.4 kWh per ton of waste collected. This allowed for accurate estimation of battery sizing and range requirements, confirming that proposed electric truck models could operate daily routes without range limitations.

From an economic perspective, a Total Cost of Ownership (TCO) and financial viability analysis compared diesel, biogas, and electric technologies under various financing conditions. The results indicated that electric trucks, while having higher capital expenditures, became more financially attractive under mixed-financing schemes that include tax exemptions (e.g., 50 percent Tax on the Transfer of Industrialised Goods and Services (ITBIS)) and capital cost reductions linked to energy cost savings.

Under optimal scenarios, electric trucks showed a 7-10 percent lower TCO over a 10-year horizon compared to diesel, and also presented stronger investment returns in terms of Net Present Value (NPV) and Internal Rate of Return (IRR).

Additionally, the emissions analysis, based on the UNFCCC's AMS-III.C methodology, showed that electric trucks using electricity generated from Duquesa's biogas could reduce emissions by up to 80 percent compared to diesel. In terms of market readiness, the study confirmed that the current regulatory framework does not pose legal barriers to introducing low-emission vehicles. Interviews with key stakeholders, municipal governments, private waste operators, energy regulators, and vehicle suppliers, revealed growing interest and willingness to adopt clean technologies, particularly electric fleets.

This paved the way for the formulation of several scalable business models, including the use of a Special Purpose Vehicle (SPV) to facilitate fleet ownership and financing, and contract renegotiation mechanisms to integrate new technology into existing service agreements.

CO_2E EMISSIONS REDUCTION (ESTIMATE)

Estimated 12,285 tCO_2e/year, or 122,850 tCO_2e over 10 years, from the deployment of 280 electric garbage trucks powered by electricity from biogas captured at Duquesa landfill.

ENERGY SAVINGS (ESTIMATE)

Electric trucks are estimated to consume 40% less energy per kilometer than diesel, with energy demand per truck ranging from 0.6–0.9 kWh/km plus 1.4 kWh/ton for compacting operations.

PILOTS:

1 pilot location, Colonial City of Santo Domingo, with trucks expected to start operation in the second half of 2025.

RESOURCES CREATED

A GPS-based driving cycle simulation tools, TCO and cash flow analysis models, Well-to-Wheel emissions calculator, Terms of Reference (ToR) for procurement, Implementation roadmap and risk matrix.

A strategic roadmap was also defined, recommending the phased deployment of up to 280 electric trucks, primarily powered by electricity produced from the biogas captured during the gradual closure of the Duquesa landfill. This roadmap was complemented by comprehensive Terms of Reference (ToR) for future procurement processes, detailing technical specifications for vehicles, battery and charging systems, safety requirements, and risk mitigation strategies across the planning, pre-operation, and operational phases.

To ensure alignment with stakeholders, the consultancy team conducted two in-person missions to Santo Domingo to engage directly with public and private actors. These were complemented by multiple virtual sessions with municipal representatives, including both outgoing and incoming administrations, to present results and gather feedback, ensuring institutional continuity and shared ownership of the recommendations.

Notably, one tangible outcome of the consultancy was its contribution to a pilot initiative in collaboration with the **Ministry of Tourism** and the IDB. Leveraging the ToR developed under this project, the team supported the preparation of tender documents for a pilot fleet of five small electric garbage trucks and associated charging infrastructure to serve the Colonial City of Santo Domingo.

This pilot is expected to commence operations in the second half of 2025 and will serve as a practical demonstration of the benefits of electrified urban waste collection. With the technical assistance now concluded, the project has equipped national and municipal authorities with a well-defined path to implement clean, efficient, and climate-resilient waste collection systems, marking a significant step toward sustainable urban infrastructure in the Dominican Republic.

Future of the project

Looking ahead, the transition to electric and biogas fleets now hinges on the commitment and coordination of local authorities. As municipal administrations review the results and finalise internal decisions, the project team remains engaged in close discussions with the IDB to support the next phase: the structuring and financing of electric fleets tailored to each municipality's needs. This ongoing collaboration will include defining implementation timelines, mobilising financing sources, adjusting business models where necessary, and supporting municipalities in preparing competitive tenders.

The anticipated deployment of the pilot fleet in the Colonial City will serve as a critical milestone, providing practical lessons that can be applied to the broader fleet transformation strategy.

As interest from stakeholders continues to grow, the groundwork laid by this technical assistance positions the Dominican Republic to become a regional reference for sustainable waste management and the integration of renewable energy in public service delivery.

Waste from the Duquesa landfill, set to close permanently, will serve as fuel for the waste management trucks fleet.

AREA OF WORK:

SUSTAINABLE TRANSPORT AND MOBILITY

4.2 DESIGNING AND ENERGISING SUSTAINABLE CITIES

PROJECTS:

URBAN AND INFRASTRUCTURE PLANNING IN MIGRATION CONTEXTS

URBAN CLEANER ENERGY INVESTMENTS IN AFRICA

SUSTAINABLE TRANSPORT AND MOBILITY

BASE

DESIGNING AND ENERGISING SUSTAINABLE CITIES

URBAN PLANNING AND INFRASTRUCTURE IN MIGRATION CONTEXTS

VISIT PROJECT PAGE

Setting The Context

The Middle East and North Africa (MENA) region is experiencing unprecedented urban growth, with its urban population projected to nearly double by 2050, from approximately **199 million to nearly 400 million inhabitants**. This rapid expansion places considerable pressure on essential urban services and infrastructure. Adding to these challenges are significant demographic factors, including the presence of **2.4 million refugees and 12.6 million internally displaced persons**, which further strain urban systems.

Urban planners in the region face the complex task of accommodating this growth while addressing the evolving needs of increasingly diverse and vulnerable populations. Furthermore, climate change presents a critical and escalating risk. According to a 2023 **report** by the United Nations Environment Programme Finance Initiative (UNEP-FI) and SDG Climate Facility, approximately 75 percent of buildings and infrastructure in the MENA region are directly exposed to climate-related hazards such as sea level rise, storm surges, and rising temperatures.

The **Urban and Infrastructure Planning in Migration Contexts (UPIMC)** programme, run by UN-Habitat through funding from the Swiss State Secretariat for Economic Affairs, addresses these challenges by providing a strategic advocacy and long-term planning framework. It aims to develop a unified, sustainable roadmap aligned with the SDGs, fostering resilient and inclusive urban environments.

By 2024, vulnerable urban areas and potential interventions were identified through a comprehensive multi-scalar and intersectoral spatial analysis. These findings were then validated, and projects prioritised through extensive multi-stakeholder consultations. The programme emphasises a participatory, bottom-up approach, actively engaging a broad spectrum of stakeholders - including civil society organisations, displaced communities, government agencies, local authorities, UN bodies, private investors, and donors - to collaboratively select and advance projects that address urban vulnerabilities effectively.

Within the project, BASE served an advisory role in transforming strategic urban plans into actionable and financially sustainable projects. Leveraging its expertise in climate finance for sustainable infrastructure, we provided guidance on aligning identified priorities with viable funding sources and integrating sustainable business models. This approach went

PERIOD

2023-2024

COUNTRIES

Cameroon, Egypt, and Jordan

PARTNERS

UN-Habitat offices in Cameroon, Egypt, and Jordan

FUNDER

UN-Habitat through the Swiss State Secretariat for Economic Affairs (SECO)

EXPECTED IMPACT

NUMBER OF BENEFICIARIES

38,138,100 inhabitants expected to benefit across 3 municipalities.

beyond securing essential donor support by empowering projects to generate revenue and ensure long-term financial independence.

Review of 2024

BASE played a key role in advancing the financial sustainability of priority urban infrastructure projects across three regions. Over the past year, we worked closely with local stakeholders to select and support one high-priority project from each country, offering tailored technical and financial guidance to move each concept closer to implementation.

The selected projects included: a city-wide urban bikeway system in New Damietta, Egypt; the upgrading of critical water and sewerage infrastructure in Al-Hashmi Al Janoubi, a high-risk neighbourhood in Amman, Jordan; and upgrading the Solid Waste Management System in Douala IV, Cameroon.

For each project, BASE advised on the development of "investment cards", which are concise, donor-oriented documents outlining the value, impact, and financing needs of the proposed interventions. In parallel, BASE conducted in-depth financial modelling, which included business model development, cost estimations for implementation, and projections for donor support requirements. These assessments also estimated how and when the projects could begin to generate revenue and become financially self-sustaining.

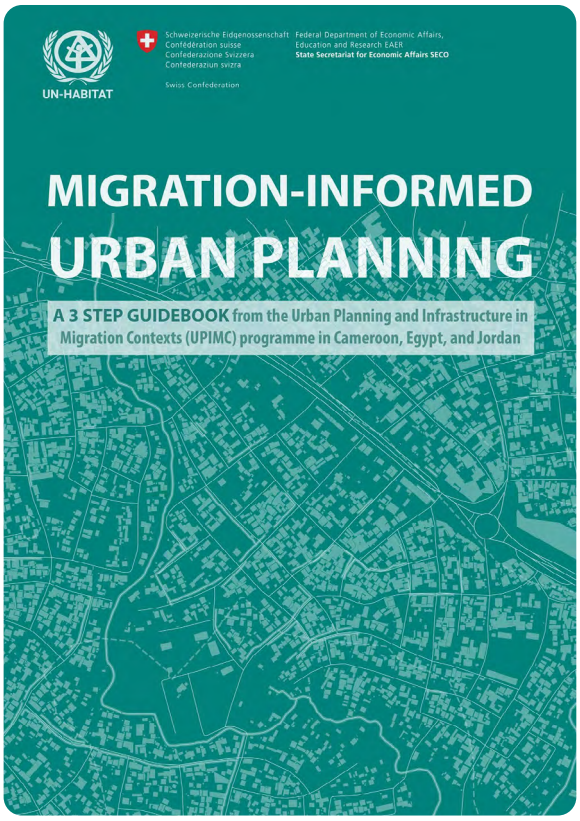
In Egypt, BASE explored an innovative model for the bikeway system by assessing the potential for solarisation. This included installing overhead solar panel canopies that would not only power lighting and advertising screens along the lanes but also provide shaded pathways, improving usability and comfort.

In Jordan, BASE examined a crowdfunding-based approach to complement donor support, enabling local residents and diaspora communities to contribute to infrastructure upgrades in vulnerable areas. For Cameroon, a cooperative model was designed to integrate informal waste pickers into the formal waste management system. Under this model, households would pay a nominal fee for door-to-door waste collection, creating stable livelihoods while improving urban sanitation.

Throughout, BASE provided inputs to ensure each project incorporated gender-sensitive elements, such as promoting equitable access, designing with women's mobility and safety in mind, and including women in operational roles. These efforts aim to make the selected interventions not only technically and financially viable but also inclusive and socially responsive.

One of the key insights gained from the UPIMC project was the importance of systematically identifying and integrating financial information throughout the urban planning process to enhance the bankability of priority projects. This includes gaining a clear understanding of municipal finances, how different utilities and infrastructure projects are typically funded, and mapping donor interests and previously financed initiatives in the region. It also involves exploring practical financing options available to local governments, such as public-private partnerships, concessional loans, or community-based models.

To help systematise this approach, BASE contributed to the development of the **Migration-Informed Urban Planning: A 3-Step Guidebook**, co-authored by the UPIMC project team. The guidebook emphasises the importance of embedding finance considerations across all three phases of the planning process: "Understanding the City" (through spatial profiling and data analytics), "Planning the City" (via visioning and area-based planning), and "Transforming the City" (through action planning and project brief development). It is accessible here:



BASE's input ensured that the linkage to project finance was not treated as a final step, but rather as an integral thread throughout the planning cycle, helping to ensure that urban planning interventions are not only technically and socially sound, but also financially viable and implementable.

Future of the project

As the UPIMC programme advances into its next phase, efforts are now focused on leveraging the insights gained to attract donor interest and secure financing for priority projects. Once funding is mobilised, leadership transitions to the relevant governmental entities, which are responsible for implementation.

Simultaneously, knowledge sharing and capacity building remain core, cross-cutting priorities across all planning phases. These efforts aim to ensure that local governments and stakeholders not only benefit from the programme's tools and methodologies but are also equipped to replicate and adapt them independently. By promoting peer-to-peer learning and disseminating best practices, the programme seeks to build institutional resilience and enable continuous innovation at the municipal level.

Lastly, the programme will continue to advocate to ensure that the voices of local governments and communities are acknowledged in global development dialogues. To advance this goal, UPIMC and BASE participated in the World Urban Forum 2024, spotlighting the specific challenges and opportunities in fragile urban settings. Discussions underscored the critical role of inclusive planning and financing strategies in conflict-affected and migration-impacted areas—reinforcing the commitment to leave no community behind in the drive for sustainable urban development.

Waste picking represent a stable source of incomes in various countries. In Pune, India, the SWaCH collective serves as a compelling example of a cooperative model that integrates informal waste pickers into the formal urban waste managment systems, providing pre-collection services to the municipality.

BASE

SUSTAINABLE TRANSPORT AND MOBILITY

DESIGNING AND ENERGISING SUSTAINABLE CITIES

URBAN CLEANER ENERGY INVESTMENTS IN AFRICA

VISIT PROJECT PAGE →

Setting The Context

Sub-Saharan Africa faces an urgent development crossroads. Over 600 million people still lack access to electricity, and its urban population, currently at 650 million, is expected to double by 2050. This rapid urbanisation, if unmanaged, risks locking cities into high-carbon, inefficient, and vulnerable infrastructure systems. Local governments are under pressure to provide sustainable energy access and resilient public services while navigating constrained budgets and limited technical capacity.

In many cities, unreliable grid supply and frequent outages have pushed administrations and communities to depend on diesel generators, expensive, polluting, and misaligned with national and global climate goals. On-grid rooftop and ground-mounted solar systems offer an economically viable alternative, particularly for public buildings like schools, hospitals, markets, and city halls. These systems reduce fossil fuel dependency, cut costs, and enhance climate resilience. However, significant barriers persist: limited access to financing, lack of bankable project pipelines, and minimal capacity within city administrations to structure and implement investments.

To address these gaps, the **Covenant of Mayors in Sub-Saharan Africa (CoM SSA)**, launched in 2015, has become a cornerstone initiative for local climate action. With more than 350 signatories, CoM SSA supports cities in transitioning from planning to implementation, with a strong focus on unlocking climate finance. Financed by the European Commission and aligned with the external dimension of the European Green Deal, the initiative strengthens the Africa-EU partnership and supports the African Union's Agenda 2063.

Component III of CoM SSA, implemented by **German Society for International Cooperation (GIZ)** in partnership with AFD, Expertise France, and AECID, aims to deepen the initiative's impact in four target countries: Cameroon, Kenya, Nigeria, and Ghana. Among its key areas is the Urban Smart Energy (USE) component, which seeks to develop decentralised solar projects on city-owned sites. The approach involves a structured, step-by-step process that includes economic and technical assessment, tendering, and setting up public-private cooperation frameworks, particularly through Power Purchase Agreements (PPAs).

Under this framework, BASE, in consortium with the **Institute for Development, Environment and Energy (IDE-E)**, the project's lead entity, has

PERIOD

2024-2025

COUNTRIES

Cameroon, Kenya, Nigeria, and Ghana

PARTNERS

GIZ, IDE-E

FUNDER

European Union (EU), the German Federal Ministry for Economic Cooperation and Development (BMZ) and, the Spanish Agency for International Development Cooperation (AECID)

IMPACT

ORGANISATIONS ENGAGED

5 focal country municipalities, and GIZ as implementing agency, with additional cooperation from local utilities and public entities in Kenya, Cameroon and Nigeria.

FINANCE MOBILISED (ESTIMATE)

USD 9.9 million total investment estimated for the first 41 assessed sites (solar PV + energy efficiency).

CO_2E EMISSIONS REDUCTION (ESTIMATE)

Over 3,600 tonnes CO_2/year avoided from the first 41 sites assessed.

joined forces to deliver the USE component. As an energy finance expert, BASE is responsible for:

- Establishing a robust Assessment Framework and Model for the economic and financial evaluation of solar projects;
- Conducting economic assessments;
- Reviewing technical documentation to ensure alignment with the envisioned financial structure;
- Providing technical and economic guidance for the establishment of Energy Service Companies (ESCOs);
- Developing a standard investment proposal format, adapted to individual municipal contexts;
- Reviewing ESCO functioning after implementation to assess viability and performance;
- Supporting the negotiation and signing of PPAs, offering tailored advice to local governments;
- Assisting municipalities in their engagement with private actors, strengthening their ability to secure sustainable investment agreements

Review of 2024

In 2024, the Urban Smart Energy (USE) component of the CoM SSA Phase III programme achieved critical milestones in unlocking clean energy investment opportunities across Sub-Saharan Africa. Under the leadership of IDE-E and with BASE acting as Energy Finance Expert, the consortium supported municipalities in preparing solar energy projects on city-owned sites, with the aim of attracting private sector investment through Power Purchase Agreements (PPAs) and Energy-as-a-Service models.

A total of 41 public sites were assessed across three countries, 49 percent in Kenya, 27 percent in Cameroon, and 24 percent Nigeria, including administrative buildings, schools, health centres, markets, and community spaces. The structured 7-step project development approach involved desktop screening, technical and economic assessments, and preparation for implementation through tendering and legal structuring.

Key results achieved in 2024:

- Installed PV capacity potential: 6.4 MWp across the assessed sites.
- Total projected investment: Approximately USD 9.9 million, including photovoltaic systems and targeted energy efficiency upgrades (e.g., lighting and air conditioning).
- Estimated annual CO_2 emissions avoided: Over 3,600 tonnes, underscoring the projects' contribution to climate mitigation and urban resilience.
- From a financial viability perspective, the assessment results are encouraging:
- 67 percent of the sites are financially viable with no or minimal public subsidy required, making them attractive for private sector-led implementation.
- 23 percent require mixed finance models, with limited co-financing necessary to close viability gaps.
- 10 percent would need substantial subsidies, suggesting limited potential for private investment but possible alignment with donor-funded adaptation strategies.

Future of the project

Building on the strong foundation established in 2024, the USE component will expand its reach and impact in 2025. The consultancy team will begin by developing detailed Terms of Reference for the deployment of solar PV systems in a selected city in Kenya, setting the stage for implementation. This process will be replicated in other participating cities as project pipelines mature. In parallel, the programme will extend its geographical scope to include Ghana, where an additional 15 technical and economic evaluations are planned, further strengthening the regional portfolio.

A key priority for 2025 will be the development of country-specific business models that reflect the unique regulatory and institutional contexts of each target country. This will involve close collaboration with legal experts to tailor investment and partnership structures, such as Power Purchase Agreements and ESCO arrangements, ensuring both bankability and long-term sustainability. These efforts will not only support municipal implementation but also position cities to mobilise climate finance and enter into meaningful cooperation with the private sector.

05

AREA OF WORK

KNOWLEDGE SHARING

ACTIVITY 1: EVENTS

A) Building Bridges 2024 Session on Guarantees as Innovative Investment Risk Mitigation Tools for Climate Solutions

BUILDING BRIDGES

PARTNERS

UNITAR Global Platform for Action, SECO, SIDA

IMPACT

AMPLIFICATION REACH

60 people joined in-person, a majority of Development banks and agencies along with impact investors, academia, and NGOs. The video recording gathered 172 views on the official livestream Youtube page.

BACKGROUND INFORMATION

A substantial financing gap needs to be bridged if we want to address the most pressing challenges of climate change for both developed and developing nations. Global climate finance requirements are estimated at USD 8-10 trillion annually by 2030, with developing countries needing USD 2.4 trillion per year. However, current investments in these regions fall far short of the necessary scale. Public sector's and developing countries' funding is insufficient to reach these targets, meaning that private local investors have an instrumental role to play in this endeavour.

Additionally, as climate solutions typically bear higher levels of uncertainty when it comes to return on investments, it is crucial to develop financial incentives to mobilise private finance.

To address this and catalyse sustainable investments, risk mitigation mechanisms are required. Among an array of innovative instruments that can be leveraged, guarantees have emerged as a powerful, yet underutilised, tool for mitigating risks and mobilising private-sector finance toward impactful climate solutions. Guarantees provide a safety net for investors, enabling the flow of capital into projects that mitigate and adapt to climate change while fostering sustainable development.

BASE has been exploring the feasibility of unlocking financing in humanitarian settings, along with the **Global Platform for Action on Sustainable Energy in Displacement Settings (**GPA), through the Guarantee for Sustainable Energy in Displacement Settings. This mechanism would gather philanthropic pledges to cover a potential financial default or early closure of refugee camps in case of unanticipated circumstances. Such a cover would enable the signing of long-term agreements, such as Energy-as-a-Service (EaaS) contracts, that could support the decarbonisation of such installations that typically rely on diesel generators that are expensive to run.

ABOUT THE EVENT

Building on this momentum, BASE Foundation and the GPA co-hosted an event at Building Bridges Geneva to explore how guarantee mechanisms can contribute to driving investment toward projects holding positive impacts on climate change mitigation and adaptation.

The Building Bridges event titled **Innovative Investment Risk Mitigation: Harnessing Guarantees for Climate Solutions Across Sectors**, took place on Wednesday the 11th of December in one of the largest rooms of the Geneva International Conference Center, and featuring four panellists:

WATCH EVENT →

- **Peter Hallbom**, Deputy Head and Lead Transaction Manager at the Guarantee Origination Unit at the Swedish Development Cooperation Agency (Sida),is responsible for multiple flagship guarantees reaching signing.
- **Christian Brändli**, Deputy Head of the Private Sector Development team at Switzerland's State Secretariat for Economic Affairs (SECO), who oversees the private sector development portfolio and is thematically responsible for sustainable finance, impact investing and blended finance. BASE and SECO have been collaborating since 2021 on a guarantee to encourage green investments in Peruvian small and medium enterprises (SMEs).
- **Mark Gibson**, Team Lead at the GPA, specialised in energy and environmental challenges in humanitarian settings.
- **Daniel Magallon**, Managing Director of BASE, who led key projects leveraging guarantees in Latin America.

The objective of the event was to review the achievements of BASE, SECO and SIDA, leading guarantee implementers, drawing attention to successful examples from various sectors and across the world to demonstrate their potential, as well as highlighting a real-world case where such a mechanism could be beneficial and showcasing the BASE's project.

The discussion was the occasion to demonstrate Sida's and SECO's successful programmes. The former, offering such guarantees for nearly 20 years, with notable growth in the past decade, now manages a USD 2 billion guarantee portfolio leveraging USD 4 billion in investments. As AAA-rated sovereign instruments, Sida's guarantees can act as first-loss in fund structures, instead of requiring fund managers to provide cash for this protection. Sida achieved a 1:70 ratio of public money to private capital mobilisation, exemplifying the scalability and sustainability of guarantees for climate and development finance.

On the Swiss side, SECO's credit guarantees proved to mobilise up to 12 times the initial funding, as exemplified by its programme aiming to encourage sustainable investments in SMEs in Peru. Over 50 companies received loans through this initiative, with only 2-3 defaults recorded over two decades. The potential of using guarantees as revolving funds was also emphasised: unlike one-time grants or fixed capital injections, guarantees allow funds to be reused once obligations are repaid or the guarantees are no longer required. This revolving use creates a continuous cycle multiplying their impact over time.

Another initiative of SECO enabling credit enhancements for infrastructure projects, named GuarantCo, witnessed only a 9 percent default rate, further revealing to the public the discrepancy between perceived and actual risks that guarantees effectively tackles.

Importantly, the event provided BASE and the GPA the opportunity to present their concept of a philanthropic guarantee, pooling pledges from donors. After discussing the major barriers refugee camps face in adopting sustainable energy such as annual budgeting cycles, contract termination clauses, and the supposedly short lifespan of camps, Mark Gibson and Daniel Magallon presented

WATCH EVENT →

the mechanism they envision to cover the investments of an eventual solar energy provider in case of early closure of the camp.

OUTCOMES

The session drew an estimated in-person attendance of 60 people, with half of them engaging in the different Slido questions designed to gather insights on the organisation they represented and the type of risks that they perceive as most significant in hindering private climate investment. Development banks and agencies constituted the largest part of the audience, followed by impact investors, academia, and NGOs.

It was valuable to notice that financial (currency, interest rates, capital access, low returns), political (instability, corruption, policy changes), and regulatory (unclear rules, bureaucracy) risks were ranked as the three most impactful.

To extend the reach of the valuable knowledge shared at the event and bring its crucial insights beyond the Building Bridges venue, the event was livestreamed on YouTube, with the recording now available.

Additionally, a detailed article summarising the key takeaways from the discussion has been published on the BASE website. The piece was drafted by the BASE team in collaboration with the four speakers to ensure the most updated numbers were featured and avoid any potential misinterpretation of their statements. The article is available **here**.

Daniel Magallon, Peter Hallbom, Christian Brändli and Mark Gibson during BASE's session.

WATCH EVENT

B) World Urban Forum: Promoting Innovative Financing Strategies in Cairo

BACKGROUND INFORMATION

Convened by the United Nations Human Settlements Programme (UN-Habitat), the twelfth session, WUF12, was held in Cairo, Egypt in November 2024. Acknowledged as one of the most inclusive international forums on urban development, WUF brings together diverse stakeholders, including government representatives, academics, business leaders, urban planners, and civil society. WUF12 focused on localising the Sustainable Development Goals (SDGs) by highlighting actionable strategies to tackle pressing issues such as unaffordable housing, rising living costs, climate change, inadequate basic services, and ongoing conflicts.

Recognising the need to integrate migration challenges into urban planning, the Urban Planning and Infrastructure in Migration Contexts (UPIMC) initiative was launched to support municipalities hosting displaced populations in Cameroon, Jordan, and Egypt.

The programme aims to enhance the management of human settlements through integrated development, governance reforms, and financing strategies. In 2022, BASE joined UPIMC to assist with project prioritisation, municipal financing reviews, and the development of financing mechanisms for sustainable infrastructure projects.

ABOUT THE EVENTS

As part of its commitment to fostering sustainable and climate-resilient infrastructure, particularly in challenging contexts such as refugee crises, BASE co-hosted two events at WUF12 in collaboration with the UPIMC project:

WORLD URBAN FORUM

PARTNERS

United Nations Human Settlements Programme (UN-Habitat)

IMPACT

AMPLIFICATION REACH

Over 200 participants online and in-person for the two events

a. Networking Event: Financing the Future of Our Cities, Collaborative Approaches for Inclusive and Sustainable Outcomes

The event underscored the pivotal role cities play in addressing global challenges like rapid population growth and social inequalities. It emphasised the importance of localising finance to unlock essential resources and opportunities, enabling cities to tackle local challenges and accelerate progress towards the SDGs. By fostering dialogue and knowledge-sharing, the event aimed to mobilise resources and forge development partnerships that are both financially viable and attuned to the unique needs of communities.

A key focus was on the power of consensus-driven actions, reflecting the collective vision of communities, and the essential role of coalition-building and co-creation in shaping effective financing models. The event also emphasised the importance of coalition-building and co-creation in developing effective financing models that address specific local needs."

Bringing together diverse voices - from communities and governments to urban experts, Multilateral Development Banks (MDBs), international organisations, and the private sector - the event created a dynamic platform for exchanging insights, innovations, and best practices.

Participants explored how global development actors and financial institutions can collaborate with local stakeholders to ensure investments align with the diverse needs of urban populations.

The event also showcased a range of successful case studies, including:

- **BASE's** innovative financing models, driving the adoption of renewable energy and energy-efficient solutions in Switzerland and Colombia.
- **The Urban Development Fund's** land-based finance strategies, harnessing public-private partnerships to reduce dependency on government budgets.
- **BCIE's** transformative housing programmes, enhancing social inclusion and reducing poverty across Central America.
- **UN-Habitat's Capital Investment Planning** methodology, which integrates development projects into city budgets through careful prioritisation, packaging, and phasing.

These inspiring examples showcased how creative financing solutions can accelerate sustainable urban development,creating long-term environmental and social benefits for communities worldwide and improve the lives of communities around the world.

b. Urban futures: Launching methodologies for Sustainable Planning and Infrastructure Development in migrant hosting Cities.

The event marked the launch of UN-Habitat's **Normative Guidebook for Urban Planning and Infrastructure in Migration Contexts**, drawing on experiences from cities in Cameroon, Egypt, and Jordan. The Guidebook outlines a consolidated methodology based on UN-Habitat's three-step approach: understanding, planning, and transforming cities. It serves as both inspiration for local governments and urban planners and a practical toolkit for scaling urban actions to national levels.

At the Urban Library event, the UPIMC programme's guidebook highlighted collaboration and knowledge-sharing, bringing together local governments, urban planners, policy-makers, and experts to explore how the guidelines could be adapted to different urban contexts. The event focused on spatial profiling, strategic vision development, linking infrastructure investments to financing by BASE, and knowledge exchange.

Panel discussion at the event *Financing the Future of Our Cities, Collaborative Approaches for Inclusive and Sustainable Outcomes.*

Local governments shared their experiences, emphasising training and capacity-building, while discussions explored synergies with Voluntary Local Reviews (VLR), spatial profiling for localisation, and enhanced monitoring.

The event concluded with a dialogue on how spatial profiles help track progress towards national and international targets and how the approach can be replicated in other cities.

OUTCOMES

The events were instrumental in spreading the word about how sustainable infrastructure projects and financing can effectively be linked, particularly in complex humanitarian contexts. By showcasing innovative financing models and methodologies, the UPIMC programme team demonstrated its ability to address critical urban challenges. Engaging national governments and local stakeholders facilitated fostered discussions on aligning BASE's and UPIMC's solutions with global frameworks, such as the Voluntary Local Reviews, ensuring greater scalability and impact.

The **Mobilising Finance event** demonstrated strong engagement, with 181 registered participants. The session saw near-full capacity attendance, hosting approximately 85 in-person attendees and reaching a total of around 100 participants when including online engagement. Similarly, the **Urban Library event**, which marked the launch of the Normative Guidebook, attracted significant interest with 134 registered participants.

Panel discussion at the event *Urban futures: Launching methodologies for Sustainable Planning and Infrastructure Development in migrant hosting Cities.*

B) E-Bus Webinar #2: Sharing Experiences From Implementations in Asia

BACKGROUND INFORMATION

Driven by rapid population and economic growth, the Asia-Pacific region is witnessing a surge in demand for passenger transport. While public transportation plays a vital role in economic and social development, it is crucial to tackle the heavy reliance of the sector on fossil fuels. The Asia-Pacific region currently accounts for **over half of global energy consumption and greenhouse gas emissions**. Without intervention, **projections suggest that by 2030**, 75 percent of transport-related energy consumption will be from oil products, leading to a 47 percent increase in CO_2 emissions by 2050 compared to 2015 levels. Public transport is considered to be a "low-hanging fruit" for Electric vehicles (EVs) adoption as it offers the largest emissions mitigation potential. But higher upfront costs creates an important barrier calling for financing solutions.

ABOUT THE EVENT

BASE's webinar series 'Driving the Change', exploring how to enable the decarbonisation of bus systems worldwide, hosted its second session, on June 5 2024.

While the first webinar aimed to highlight the ingredients of implementation successes in Latin America (link to the event **here**), this second session further explored solutions to deploy electric buses at a national or municipal scale by examining key cases from Asia.

On top of Francisco Ramirez Cartagena, BASE's senior electric mobility specialist, three leading experts and researchers joined to analyse the models that made unprecedented projects possible in India, Indonesia and China:

- **Xiuli Zhang**, China Projects Manager at Energy Innovation, conducted research projects on electric and diesel bus cost parity in Shenzhen, and road transportation energy and greenhouse gas emissions projections in China, among others.

IMPACT

AMPLIFICATION REACH

30 attendees and 85 views on Youtube shows as of 2025. 70 views for the key takeaways article. 1 featured news in the Sustainable Bus Magazine.

- **Mahua Acharya,** as the Managing Director and Chief Executive Officer of state-owned Convergence Energy Services Limited (CESL), Mahua played a central role in programmes that led to the deployment of nearly 20,000 fully electric buses on Indian roads.
- **Francisco Posada,** ICCT Southeast Asia Regional Lead who leads the efforts to electrify the bus fleets of Jakarta, tackling key technical, financial and technological challenges.

Bringing leading case studies under the spotlight, the session was the occasion to discover the ingredients and methodology behind the success of these projects.

In India's case, Mahua highlighted how the Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME) programmes innovatively reduced costs of acquisition by centralising demand for e-buses via national tenders, enabling economies of scale. Under the programme, the public utilities of managing transport systems also shifted their approach to adopt service contracts, where buses were procured and operated by private operators in exchange of a per-kilometer fee, reducing upfront costs and operational risks for state transport corporations. Over 8,000 e-buses have been deployed, achieving cost savings and record-low prices.

Xiuli highlighted how Shenzhen, China, became the first city in the world with an all-electric bus fleet. This success owes to a programme aiming to improve air quality

WATCH EVENT

in cities under which a combination of strong subsidies and financial incentives (such as tax exemptions), clear targets, and effective collaboration between different governmental agencies, led to the phasing out of all diesel buses.

In Indonesia, Francisco worked with the ICCT to electrify Jakarta's fleet, along with UNEP and C40 aiding efforts to overcome policy and infrastructure hurdles. The team conducted a fleet-level analysis (to calculate the total cost of ownership for current and future electric fleets, considering factors such as contract duration, tax policies, electricity and fuel prices, and identifying potential institutional and policy barriers) and route-level analysis (to identify the most cost-effective routes to electrify and the most challenging ones), to determine the most efficient way to start the electrification of TransJakarta buses and the right contract duration to allow for long-term savings.

OUTCOMES

This webinar series aligns with BASE's mission to drive the global transition to electric buses by creating innovative financing strategies and business models that address the challenges of e-mobility adoption. Hosting the webinars contributed to nurture a sectoral network, building connections among key stakeholders.

The webinar gathered an audience of 30 people, and the recording uploaded on Youtube shows 85 views as of January 2025. To further expand the reach of the insights shared during this session, the team created for the first time an comprehensive article summarising the key takeaways of the event, which was at first published on BASE's website, where it attracted 70 viewers. The article can be seen **here**.

Additionally, the article was also shared by the leading online magazine on the electric bus topic in Europe, **Sustainable Bus Magazine**, which enabled this knowledge to be shared beyond BASE's channels and audiences. The republished article can be accessed **here**.

WATCH EVENT

ACTIVITY 2: REPORTS AND PAPERS

A) IFC Servitisation Paper: Creating EaaS Markets In Public And Private Buildings In Emerging Cities

PARTNERS

International Finance Corporation (IFC)

BACKGROUND INFORMATION

Cities in rapidly growing economies face the challenge of growth while managing their energy consumption, grid stability and complying with their decarbonisation pathways. Conflicts in priority of investments, technology complexities, expertise requirements and trained personnel, low resources and high perceived risks all yield bottlenecks for the private and public sector to scale the deployment of energy-efficient solutions and renewable energy. As population grows and demand for various services grows (cooling, heating, lighting, ...), the latter represents a considerable risk on the climate, electricity grid and population wellbeing. Efficiency-as-a-Service (EaaS) represents an appealing solution for both the private and public sectors to transition to clean and energy-efficient solutions in the built environment, without the need of upfront investments, technology risks and operational challenges.

ABOUT THE PAPER

BASE, in collaboration with the **International Finance Corporation (IFC)**, engaged in a collaboration to design training materials to ease the market analysis and investments into EaaS opportunities. The aim of the collaboration has been to develop a series of technical notes to ease and accelerate investments into EaaS, to scale the deployment of energy efficiency and renewables and further support cities realising their investment pipelines and decarbonisation efforts.

More particularly BASE created:

- A "checklist" with the minimum elements a city needs in place to roll out an EaaS model for public buildings. These elements can be associated with regulation, governance, technical capacity, necessary tools, operational IT systems or technologies, procurement guidelines or fiscal aspects and can work as pre-conditions to deploy the EaaS model.
- A "process outline" for cities interested in leading the implementation of an EaaS programme. BASE created a detailed process to design, implement, and monitor an EaaS programme in public buildings, including identification of functions and responsibilities of main actors, functional relationship model for operations, and any other information deemed relevant. The process outline also included how the different stakeholders can get engaged with EaaS, implement the model (operations on the ground, company structure...), and finance it (financial structure, selection of company...).
- A document describing the role of the private sector including a general illustrative description of a city's potential roles and strategies to engage and mobilise the private sector entities to participate in the model. Along with the latter, BASE provided a standardised EaaS contract to engage the private sector.

The technical notes focused on how EaaS can secure the necessary resources to transform energy consumption to decarbonise the built environment and make cities more resilient, and how to execute the latter in a specific market & region.

OUTCOMES

IFC has created a climate-smart cities platform called **APEX (Advanced Practices for Environmental Excellence in Cities)**. This platform is a data-driven application that provides information in real time regarding four areas: energy, transportation, water, and waste systems. This data helps cities identify and invest in green solutions, (such as green buildings, recycling, renewable energy, and green transportation), develop long-term strategies, and measure and monitor the performance of the city.

As the APEX team support client cities with developing a pipeline of investment, policy, and planning opportunities, it is also looking to identify suitable financing models for these projects. EaaS emerged as a powerful tool to drive the adoption of more sustainable energy systems. Ultimately, the paper created will support the investment strategy into EaaS projects.

B) The Energy Savings Insurance (ESI) White Paper

BACKGROUND INFORMATION

Whilst energy efficiency is considered **the most cost-effective way to achieve the energy transition**, the higher price of high-performance energy technologies and uncertainties on their financial and environmental returns often dissuade potential uptakers. Small and medium enterprises, which constitute the backbone of the world's economies **as they represent 90 percent of businesses on the planet**, tend to prioritise investments in their core activities rather than upgrading energy systems perceived as a more uncertain investment.

Therefore, addressing the performance risk of cleaner energy solutions is essential to further enhance their benefits, which primarily include energy consumption reductions, and consequently lowered utility and operating expenses, reduced CO_2 emissions and improved sustainability.

Based on this observation and realising the importance of the lack of trust in the actual savings efficient equipment can deliver, BASE and the IDB, with the support of the Danish government, conceptualised the Energy Savings Insurance (ESI), designed to alleviate the responsibilities of both stakeholders and reinforce trust in their relationship. It does so by adding a validation firm to independently verify the equipment's performance and an insurance product to reimburse any difference between contractually determined energy savings and actual results.

The Colombian development bank Bancoldex launched the first programme bringing it to market. After seven years, in Colombia alone, 262 projects benefited from ESI, representing a total of over USD 28 million of investments. Following this, ESI was further deployed in Latin America successfully facilitating SME's transitions to more performing and climate friendly systems. The model was recently replicated in Morocco, Mongolia, and six European countries by BASE and its partners.

IMPACT

AMPLIFICATION REACH

Over 2000 people reached on social media and 130 page views for the release article.

ABOUT THE PAPER

Developed by BASE specialists with long-standing experience with the model, the **Energy Savings Insurance (ESI) White Paper** serves as a comprehensive resource capturing all aspects of the ESI model. It includes ain-depth analysis, case studies, and best practices practices drawn from the model's application in various contexts, offering valuable insights into its effectiveness, adaptability, and the strategies used to overcome challenges in each location.

In details, the document covers:

- **The model's key components**, including the standardised contracts, technical validation processes, and innovative insurance products designed to build trust and reduce investment risks. It also explores

ACCESS PAPER →

financing mechanisms such as green loans and highlights the role of an online platform for streamlining stakeholder interactions.

- **The benefits of the model,** including its ability to reduce financial risks, build stakeholder confidence, unlock access to financing for SMEs, and drive significant energy savings and emissions reductions.
- **Reviews of implementations** across various regions, sharing practical insights on implementations and lessons learned from its deployment in Latin America, Europe, Asia, and beyond.
- **Case studies** illustrating the model's application in real-world situations, providing a testament to the model's effectiveness and serving as examples to inspire future adopters.

By sharing these learnings in a consolidated white paper, BASE aims to contribute to the knowledge surrounding energy efficiency risk mitigation and financing, and inspire further innovation and replication of successful practices. The collective wisdom and insights gained from diverse experiences will inform and empower stakeholders, policymakers, financial institutions, and other entities interested in implementing similar models globally.

The white paper release was announced by BASE specialist Livia Miethke Morais at the **Asian Development Bank** (ADB)'s *Regional Workshop on Climate Finance: Role of Insurance in Financing Climate Risk in New Delhi.* The event brought together regional and international experts to explore the use of innovative financial instruments, such as insurance and guarantees, in tackling climate-related challenges. Additionally, Livia provided shared about the piece and provided insights from its content over the ADB's **Climate and Disaster Risk Insurance Forum** in Manila, where she joined the panel discussion on "De-risking Energy Efficiency Investments."

OUTCOMES

Overall, the production of the White paper and its release was the occasion to not only spread the word about the ESI model and its potential impact, but also to nurture the discussion on the need for innovative de-risking mechanisms to address climate change challenges. Its primary objective is to serve as a how-to guide for facilitating the adoption of the ESI model and promoting more efficient equipment among SMEs.

The White Paper was published on the BASE website and publicised on social media and via the quarterly newsletter. Beyond digital promotion, the authors of the paper managed to actively take part in influential events from prominent stakeholders in the area, which includes, on top of the above mentioned, Viola Buli, an intervention at the **United Nations Environment Programme Finance Initiative** (UNEP FI) webinar titled **"Scaling Private Investment for Energy Efficiency."**

Livia Miethke Morais at ADB's Regional Workshop on Climate Finance.

ACCESS PAPER

C) CIF Technical Assistance Facility Knowledge Product

BACKGROUND INFORMATION

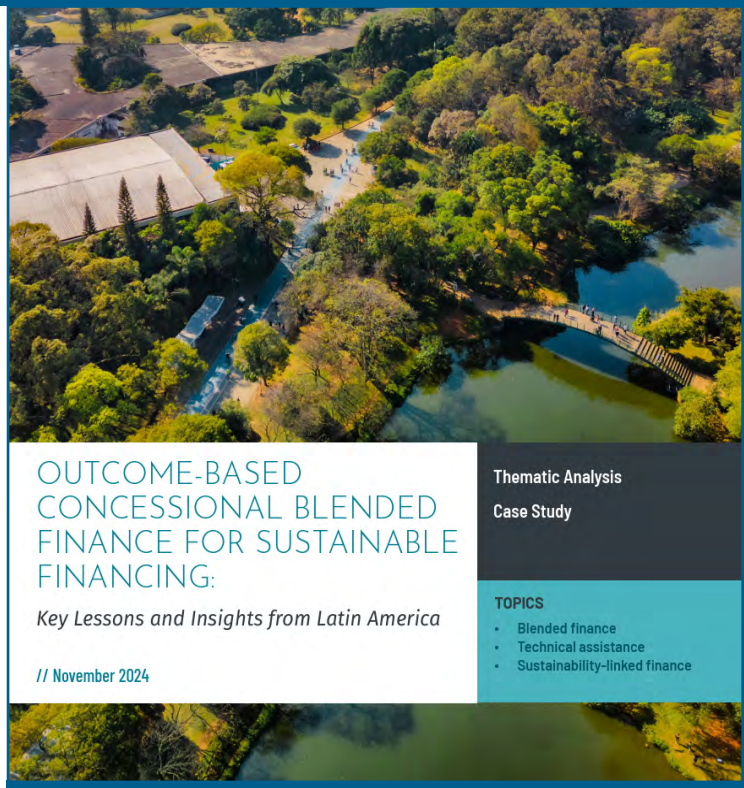
The banking and finance sectors are key to advancing global sustainability. While the UN estimates a **USD 4 trillion annual gap to meet the 2030 SDGs**, closing it would require less than 1 percent of global financial assets. Public finance alone isn't enough: private capital must also be mobilised. Blended finance, which combines concessional and commercial funds, can help unlock investment in high-impact, higher-risk projects. When paired with technical assistance, it can further support financial institutions in embedding sustainability and mobilising greater capital.

ABOUT THE PAPER

In partnership with **IDB Invest** and as part of the **Climate Investment Funds (CIF) Technical Assistance Facility**, BASE conducted a strategic learning review to evaluate the role of blended and sustainable finance in accelerating climate action in Latin America. Focusing on Brazil and Colombia, the initiative culminated in a knowledge product, **"Outcome-Based Concessional Blended Finance for Sustainable Financing"**, published in November 2024. The study draws on in-depth case studies of Sicredi and Produbanco to illustrate how financial institutions are evolving from conventional lending models to outcome-based instruments that align financial returns with climate and sustainability outcomes.

These case studies showcase innovative financial transactions that incentivise sustainability through outcome-based mechanisms linked to achieving predefined milestones. The report emphasises how blending concessional finance with technical support enables FIs to undertake systemic transformations in their portfolios, operations, and strategic approaches, aligning with international sustainability standards and contributing to the global climate agenda.

BASE's contributions included stakeholder consultations, development of an analytical framework, and synthesis of lessons learned to inform future CIF programming.



In a **virtual session on the 11th of December**, the CIF officially launched the report and shared key insights from the study and experiences from practitioners on the ground to guide the next phase of zero-carbon transition and climate-resilient investments. The discussion spotlighted the impact of blended finance transactions on financial institutions, including overarching portfolio shifts, governance enhancements, and strengthened client engagement. It also highlighted how these mechanisms are driving transformative business practices in alignment with ambitious climate goals across Latin America and the Caribbean.

OUTCOMES

By highlighting successful models like Sicredi's financing for distributed solar and gender-diverse portfolios in Brazil, and Produbanco's thematic bond for green lending in Ecuador, the project provides actionable insights into structuring blended finance to close the sustainable finance gap and drive systemic transformation in the region's financial sector.

ACCESS PAPER →

D) The Efficiency-as-a-Service (EaaS) Briefing

BACKGROUND INFORMATION

Energy efficiency represents a key solution to tackle climate change: doubling the pace of efficiency improvements could reduce energy costs **by one-third and account for 50% of CO_2 emission reductions by 2030.** Within the European Union (EU), energy efficiency is an indispensable enabler to reaching most objectives of the **Fit For 55 package**, which aims to reduce net greenhouse gas emissions by at least 55 percent by 2030 across the 27 nations.

Despite the potential, investments in energy efficiency remain largely untapped due to several barriers, including performance uncertainties for modern systems and long returns on investment, a lack of experience in financing energy efficiency, and a lack of accessible financing instruments. These challenges highlight the urgent need for new business models that balance the risks and align the incentives between users and providers.

For the past 5 years, BASE has been engaging substantial efforts in the development of pay-per-use models applied to cleaner energy solutions, which effectively improve access to energy efficiency and renewable energy systems. In 2019, BASE launched the **Cooling-as-a-Service (CaaS) Initiative** to promote clean refrigeration solutions globally. The initiative accelerated the growth of companies using the pay-per-use model and fostered innovation through the CaaS Alliance in over 20 countries.

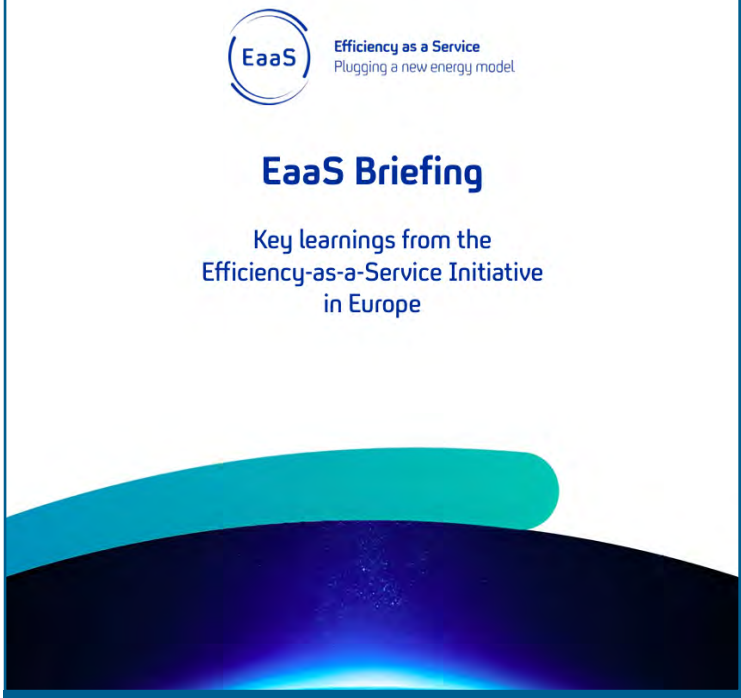
After this success, the **Efficiency-as-a-Service (EaaS) Initiative** was launched to introduce similar models for a broader range of sustainable energy technologies in three European countries.

ABOUT THE PAPER

The **EaaS Briefing** summarises the key insights and learnings from the Efficiency-as-a-Service initiative. Its content was developed as part of the project's dissemination component with the objective of creating a single report gathering the knowledge acquired over the 4 years of implementation.

In detail, the document covers:

- **An introduction to the EaaS model:** The rationale for energy efficiency adoption, an explanation of the model, and project implementation strategies.
- **The key tools developed under the project:** Standardised contracts, pricing mechanisms, MRV principles, and risk management guidelines to streamline implementation and mitigate risks.
- **A market analysis**: Insights into EaaS adoption in Belgium, the Netherlands, and Spain, detailing successes and challenges.



PARTNERS

Agoria, Anese, EIT InnoEnergy

IMPACT

AMPLIFICATION REACH

The EaaS Briefing was accessed more than 120 times on both BASE and the SET Alliance websites, and reached nearly 1400 social media users.

ACCESS PAPER →

- **Success factors and barriers:** Analysis of enablers and inhibitors for scaling the model effectively.
- **Practical guidance:** Considerations for providers, customers, and financiers in transitioning to the EaaS model.
- **Roadmap for Scaling:** Strategies for mainstreaming EaaS, including public sector engagement, finance unlocking, and alignment with Net Zero pathways.
- **Future Perspectives:** A description of the SET Alliance's role in scaling EaaS globally.

After being designed, the paper was published and promoted to serve as a key knowledge repository for any entity willing to adopt or replicate the model.

OUTCOMES

The EaaS Briefing aims to contribute to accelerating the shift to more sustainable energy solutions with the servitisation business model. The journey of the Efficiency as a Service (EaaS) project has been instrumental in advancing servitisation in the European energy sector. The learnings from the program have laid a solid foundation for transformative change in markets and industries across Belgium, the Netherlands and Spain.

Building upon the success and insights gained, and to carry forward the momentum generated by EaaS, BASE launched the **Global Servitisation for Energy Transition (SET) Alliance** in 2022. In 2023, the Servetia initiative, focused on Switzerland, also started. These ambitious projects aims to accelerate the mainstream adoption of the servitisation model and contribute significantly to the decarbonisation of the built environment and reduction of environmental impacts.

The EaaS Briefing has been integrated as part of BASE's and the SET Alliance key resources, accessible on both website (**here** and **here**) to strengthen the capacity of solutions providers, their customers, and financiers willing to shift to cleaner energy systems without important capital investments.

ACCESS PAPER →

ACTIVITY 3: PROJECTS

A) OECD Advisory Services India and Indonesia

BACKGROUND INFORMATION

Micro, small and medium-sized enterprises (MSMEs) in India and Indonesia account for a significant amount of final electricity demand, yet less than 5 percent of their capital expenditure is channelled into energy-efficiency upgrades. According to the IEA Energy Efficiency 2024 report, efficiency gains **must double this decade to keep the 1.5 °C pathway alive**. COP28 called for a global tripling of clean-energy investment and a "Just Transition" that safeguards jobs while cutting emissions. Unlocking private finance for retrofit projects therefore sits squarely within SDG 7 and SDG 13, but high perceived risk and scarce long-term credit still hamper uptake across fast-growing Asian markets.

ABOUT THE PROJECT

Through the OECD's **Clean Energy Finance and Investment Mobilisation (CEFIM)** Programme, BASE is helping governments and financiers in India and Indonesia design an Energy Savings Insurance (ESI) schemes that de-risk loans for efficiency projects. Under a new OECD–BASE contract signed on 25 June 2024, the activities included:

Roadmap delivery in India: Between May and October 2024 the team convened four technical consultations (New Delhi & online) with the **Bureau of Energy Efficiency (BEE)**, commercial banks and insurers, engaging 110 stakeholders. Inputs fed into the **Draft ESI Implementation Roadmap**, which outlines performance-contract templates, validation protocols and a pipeline of two pilot sectors (textiles and food-processing).

- **Market scoping in Indonesia:** A high-level Public-Private Dialogue on 30 May 2024 in Jakarta gathered 70 representatives from OJK, MEMR, PT SMI and local insurers to map barriers and opportunities. Follow-up virtual sessions (Q3 2024) produced a Needs Assessment that quantifies a USD 450 million addressable market and recommends a surety-bond structure aligned with national insurance rules.
- **Capacity building:** Across both countries, 14 technology vendors and 9 financial institutions completed BASE's online ESI masterclass.

OECD
BETTER POLICIES FOR BETTER LIVES

PARTNERS

Organisation for Economic Co-operation and Development (OECD)

IMPACT

REACH OF CAPACITY BUILDING ACTIVITIES

Over 180 stakeholders trained among 26 public- and private-sector organisations.

NEXT STEPS

The next phase of the programme will centre on close collaboration with the ESI Task Force, established with the support of the OECD to drive coordinated market development in Indonesia. Co-chaired by OJK and OECD-CEFIM, and with BASE serving as technical lead, the Task Force will: (i) conduct a scoping study to identify bankable energy-efficiency opportunities and clarify the roles of insurers, lenders, and ESCOs; (ii) develop a Roadmap for Sustainable Financial Products, integrating ESI into OJK's green finance framework; and (iii) define a flagship pilot and risk-pricing methodology, informed by international claims data. In parallel, targeted capacity-building will enable at least 20 financial institutions to evaluate and finance ESI-backed projects. Once a domestic insurer or consortium secures the necessary operating permit, expected by early 2026, the Task Force will transition to full market activation, with the goal of mobilising USD 15 million in retrofit investments and positioning ESI as a scalable solution within ASEAN's Just Energy Transition agenda.

ACTIVITY 4: ARTICLES

A) Agents of change: Stories from the Swiss Youth

BACKGROUND INFORMATION

Youth involvement in climate decision-making is an urgent necessity and a powerful opportunity. Young people are highly vulnerable to climate change impacts, yet they are also catalysts for action, bringing energy, innovation, and determination to the fight against the climate crisis. Despite their strengths, youth are often excluded from critical decision-making processes, leaving their voices unheard where they are most needed.

Their advocacy is vital to sensitising decision-makers and pushing for meaningful action, with youth-led activism already shaping climate discourse and driving businesses and governments toward greater transparency and voluntary climate action. By engaging in stakeholder activism, young people can influence policies and foster collective action.

Recognising this, BASE recently reinforced its commitment to youth leadership by highlighting the work of two Swiss youth on International Youth Day, celebrating their vital role in shaping a sustainable future and underscoring the importance of creating platforms that allow youth voices to meaningfully influence climate action.

ABOUT THE ARTICLE

Two Swiss climate activists, Solange Zongo and Cyrill Hermann, shared their impactful work with BASE through the article **Agents of Change: Stories from the Swiss Youth.** Solange, through her involvement with the **Swiss Youth for Climate (SYFC)** and **UNICEF**, emphasised the crucial role of education and empowerment in driving climate action. SYFC's initiatives, including the documentary "Hearing No Objections," aim to equip young people with the knowledge and agency to become agents of change. Cyrill, an active member of **Klimastreik Zürich**, highlighted the importance of activism and systemic change. He emphasised the need for bold actions, community-level engagement, and collaboration across the climate movement to achieve their goals.

Both activists acknowledged the profound emotional toll the climate crisis takes on young people. Cyrill described how participating in climate strikes transformed his eco-anxiety into collective action, fostering a sense of community and alleviating feelings of isolation. Solange further elaborated on the diverse manifestations of eco-anxiety, ranging from sadness and anger to debilitating depression and hopelessness. She argued that addressing these challenges requires a multifaceted approach, including the creation of green jobs and the development of green skills. These not only offer practical solutions but also provide a renewed sense of purpose and agency.

IMPACT

AMPLIFICATION REACH

Over 350 reads on BASE's channels. Illuminem.com, a leading climate news platform with over 350k users, republished the article here.

ACCESS ARTICLE

Inclusivity emerged as a central theme in the conversation. Cyrill emphasised the unique vulnerabilities of LGBTQIA+ individuals in the face of climate change, calling for increased research and awareness to address these disparities, particularly in low- and middle-income countries. Solange stressed the critical need for meaningful youth inclusion in decision-making processes, cautioning against the dangers of "youth-washing" – where young people are merely tokenized. She advocated for capacity-building initiatives that empower young people to take effective action and bridge generational divides. She highlighted programmes like SYFC's "Adopt a Decision-Maker" initiative serve as powerful examples of how collaborative efforts between youth and policymakers can achieve impactful outcomes.

Both Cyrill and Solange viewed their professional paths as extensions of their climate activism, reflecting the broader trend among many youth efforts today. Cyrill's forthcoming book seeks to re-engage the public with the climate movement, providing practical guidance for local action within a global framework. Meanwhile, Solange's work with UNICEF focuses on empowering young people with the tools to address climate challenges, from local initiatives to influencing national climate policies.

OUTCOMES

Their efforts demonstrated that a successful climate action strategy required a multi-pronged approach: systemic challenges through activism, individual empowerment through education, and inclusive engagement across diverse communities. This comprehensive strategy provides a clear framework for tackling the complexities of the climate crisis and inspiring collective action.

The article marked the beginning of BASE's efforts to hold similar conversations with youth activists worldwide. This initiative aims to understand the challenges and perspectives of youth activists globally.

Cyrill Hermann (left) addressing the public in Zurich.

ACCESS ARTICLE

B) Climate Finance Innovations: 5 Transformative Approaches

BACKGROUND INFORMATION

BASE has long been at the forefront of promoting financial innovations to address climate challenges. Recently, the organisation has actively leveraged Sustainability-Linked Loans & Bonds and worked with Disclosure Standards when advising private banks on developing sustainability strategies. Additionally, BASE has played a key role in advancing Taxonomies for Sustainable Finance, particularly for the circular economy, across projects in Latin America.

By supporting the financial sector in identifying sustainable opportunities and using tools that help banks determine and implement their ESG goals, BASE continues to contribute to aligning financial flows with sustainability goals.

ABOUT THE ARTICLE

This article, published in May 2024 in two parts (1 & 2) was crafted collaboratively by BASE specialists from different backgrounds. It dives into five innovations the team saw rising within the climate finance sphere, that seem promising to unlock funding for sustainable projects. The concepts that the article captures hold potential to contribute to a future where innovative financial tools catalyse a more sustainable and resilient global economy.

The two-part article published in May 2024 explores five transformative financial innovations:

- **Impact Investment Funds**: Driving investments in sustainable development projects by balancing financial returns with measurable social and environmental impact.
- **Sustainability-Linked Loans & Bonds**: Offering incentives tied to sustainability performance metrics, encouraging companies to embed sustainability in their operations.
- **Blue Finance**: Focusing on marine ecosystems by funding projects that support ocean conservation and sustainable use of marine resources.
- **Taxonomies for Sustainable Finance**: Providing a classification system to help financial institutions identify and promote sustainable economic activities.
- **Disclosure Standards**: Enhancing transparency by requiring organisations to report climate-related risks and opportunities, aligning investments with sustainability objectives.

The insights presented in this article are a direct result of BASE's extensive experience over the past two years, collaborating on sustainable banking projects with numerous banks and banking associations.

OUTCOMES

By examining and promoting these financial innovations, this article aims to contribute to driving sustainable investments and address key climate finance gaps. This piece effectively consolidates the key learnings and practical insights gained from the financial instruments and tools researched or utilised throughout the organisation's initiatives.

C) Financing restoration: an exploration of solutions

BACKGROUND INFORMATION

Despite the clear benefits of restoration - including improved food production, water quality, and carbon sequestration - funding remains a challenge.

Historically reliant on public and philanthropic sources, restoration projects often lack sufficient financing mechanisms to achieve large-scale impact. Innovative solutions are needed to unlock investments in nature-positive projects. Throughout its journey, BASE has implemented multiple innovative financial solutions to de-risk and encourage investments in sustainable energy and circular economy initiatives. Some of these have potential to also benefit nature projects.

ABOUT THE ARTICLE

Guarantees and blended finance mechanisms, among others, are tools that in demonstrated their ability to mobilise private investments for projects with high perceived risks and delayed returns. Such challenges also apply to restoration. Taxonomies and sustainable finance, which BASE developed in Latin America, are key to guide financial institutions to identify relevant investment opportunities.

This article aimed to raise awareness about thse innovative financial tools, exploring a selected panel of mechanisms to overcome financial barriers, which included the following:

- **Revolving Loan Funds (RLFs):** Short-term financing for timely land acquisitions, creating a renewable capital source for future conservation projects.
- **Debt-for-Nature Swaps (DNS):** Forgives portions of national debt in exchange for environmental commitments in biodiversity-rich areas.
- **Blended Finance:** Combines public or philanthropic capital with private investment to reduce risks and attract funding for sustainable projects.
- **Guarantees:** Provide a safety net for investors, covering potential losses and reducing risk perception for nature-positive initiatives.
- **Sustainability-Linked Loans (SLLs):** Tie loan terms (such as the interest rate) to the achievement of specific environmental KPIs, incentivising impactful restoration efforts.

IMPACT

AMPLIFICATION REACH

Over 570 people and attracted nearly 160 clicks. The article was also published by Illuminem here.

OUTCOMES

Through this article, BASE wanted to give a glimpse of the potential of de-risking tools for driving finance to restoration projects. A second article on the topic is under development, which will focus more particularly on biodiversity credits and the concept of habitat banks.

ACCESS ARTICLE

ACTIVITY 5: PODCASTS

A) The Big Shift: Episode 5 on Cooling-as-a-Service

BACKGROUND INFORMATION

To address the pressing need for sustainable solutions in the cooling sector, BASE has been actively exploring and advocating innovative models like Cooling-as-a-Service (CaaS). CaaS transforms how cooling technologies are financed and adopted, promoting energy-efficient solutions powered by natural refrigerants while overcoming financial and operational barriers through a pay-per-use model.

With buildings accounting for a significant share of global energy demand, integrating sustainable cooling solutions is pivotal for decarbonisation and climate resilience. BASE has been a pioneer in promoting sustainable cooling through initiatives such as the Cooling-as-a-Service (CaaS) Initiative, which leverages the servitisation model to make energy-efficient and climate-friendly cooling technologies accessible.

ABOUT THE EPISODE

The fifth episode of BASE's podcast series, **The Big Shift: The Climate Finance (R)evolution**, marked the first instalment of the **Youth Voice** series. This special series fosters dialogues between students or young professionals and leading experts to clarify the complexities of climate finance, inspire fresh perspectives, and encourage critical thinking. The episode featured **Dolf Eck**, a master's student in Sustainable Energy Engineering at the Royal Institute of Technology of Stockholm, alongside BASE specialist Dimitris Karamitsos and industry leaders Morten Stensli, from **Aneo retail**.

Moderated by Dolf the episode explored:

- The role of sustainable cooling in mitigating climate change.
- The benefits of adopting natural refrigerants and energy-efficient technologies.
- How the CaaS model addresses barriers to adoption, delivering financial and operational benefits.
- Real-world examples, with a special focus on Aneo's projects equipping supermarkets in Norway for state-of-the-art and efficient refrigeration systems through CaaS models.

The discussion provided a platform for young voices to engage with and challenge industry perspectives, creating a unique bridge between emerging talent and established expertise in climate finance.

IMPACT

AMPLIFICATION REACH

60 plays on Spotify platform, by users located in various countries across the globe. Social media snippet gathered over 1700 views.

OUTCOMES

By sharing practical insights through accessible formats, the initiative wishes to raise awareness among the greater public on climate solutions. The focus on practical examples, such as the Danfoss-Aneo project, hopes to inspire further adoption and replication of these transformative models.

ACCESS EPISODE →

LEGACY REVISITED

Reflecting on Past Endeavours:

A Review of BASE's Past Projects

ECOFRIDGES Ghana & Senegal

From 2020 to 2023, BASE collaborated with the UN Environment Program's United for Efficiency (U4E) initiative and partnered with the governments of Ghana (Energy Commission, Environmental Protection Agency) and Senegal (AEME, DEEC) to accelerate the adoption of energy-efficient and climate-friendly refrigeration and air conditioning solutions. The project developed on-bill and on-wage financing schemes to enable utility customers and salaried workers to access efficient cooling appliances through affordable loans. Beneficiaries could obtain zero or low-interest rates and repay them in 12 monthly installments, either through salary deductions or additions to utility bills. Typically, the use of these efficient systems reduces utility costs immediately upon acquisition, offsetting or minimising the repayment impact on household budgets.

Today, ECOFRIDGES GO continues to thrive in Ghana, and regional scale-up efforts underway.

As of September 2024, the EcoFridges Programme achieved the following in Ghana:

- 2,055 new air conditioning devices sold
- 3,136 new refrigerators sold
- 41,783 MWh reduction in energy consumption
- 33.77 million GHS in total finance mobilised
- 34,603 tonnes of CO2 (direct and indirect) reduced.

Visit project page

Energy Savings Insurance (ESI) in Morocco

In 2023, BASE supported Morocco's Super-ESCO, SIE, in laying the groundwork for the deployment of energy performance guarantees as part of a of project aiming to bring the Energy Savings Insurance (ESI) model to the Moroccan market.

Through close collaboration with a local law firm and technical validation entity, the project team helped develop key components of the ESI framework tailored to the Moroccan context, including a standardised contract, a savings validation process, and an insurance product adapted to the needs of energy efficiency projects. The initiative also produced a suite of localised tools and market insights, such as a directory of green financial products, potential technology providers, and implementation guidance for monitoring systems.

While the ESI pilot phase concluded in mid-2023, the work contributed to a solid foundation for performance-based energy contracting in the country. Today, SIE is offering Energy Performance Contracts (EPCs) with guaranteed savings, which link repayment to verified energy savings, to industrial and commercial clients.

While these EPCs do not currently include an insurance product or an external validation process, they pursue the same objective of de-risking energy efficiency investments and strengthening trust between clients, technology providers, and financiers. This evolution illustrates how early-stage technical support and market adaptation efforts can help unlock lasting change in national energy efficiency ecosystems.

Visit project page

TESTIMONIALS

Testimonials
From our donors

"Fondation Valery has been proud to partner with BASE since 2023 on the Servetia Initiative. Leveraging BASE's global expertise in deploying servitisation solutions - now brought back to our beloved Switzerland - this initiative offers a powerful framework to accelerate the energy transition.

By pioneering performance-based business models, it tackles key financial barriers to clean technology adoption. We particularly appreciate BASE's business-driven approach, anchored in a philanthropic mindset and shared values.

Together, we are creating a more inclusive and scalable pathway to market participation, helping turn decarbonisation goals into tangible results across Switzerland."

- Yannick Ritschel, Director at Foundation Valery

Related project: Servetia

Fondation Valery

"Over the past couple of years, I had the opportunity to closely collaborate with BASE on various projects as part of UNEP's NDC Action Programme. From setting up the environment for e-bus deployment in West Africa to implementing the Energy Savings Insurance to mitigate risks of energy efficiency investments in Mongolia, I am grateful for the illuminating expertise brought forward by the team.

Joining forces, we have been able to effectively support various countries' journey towards the achievement of their climate mitigation and adaptation targets. These endeavours represented a new fruitful collaboration among many between BASE and UNEP, underlining once more the value of this unique relationship."

UN environment programme

- Jérôme Malavelle, Coordinator, NDC Act & Invest, Global Climate Action Unit, Mitigation Branch, Climate Change Division at UNEP

Related project: Scaling E-Buses in Ghana, Energy Savings Insurance in Mongolia.

"The experience with BASE has been very rewarding. Thanks to their high level of professionalism and commitment, the implementation of the project has been very successful. It was the sum of all the efforts of each member of the BASE team. We are very grateful for their work, for their persistence and progress, which honours the path we have travelled."

- Ramiro Salinas, Climate technology specialist and liaison for LAC at Climate Technology Centre and Network (CTCN)

Related project: Circular Economy Financing in Latin America and the Caribbean

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

Testimonials

From our donors

In 2024-2025, we had the opportunity to work with the BASE team, led by Carla Della Maggiora, in the implementation of the first UNEP FI circular economy program in 4 Latin American countries (Costa Rica, Chile, Uruguay and Dominican Republic), possible thanks to the support of CTCN and the GO4SDGS Initiative.

The professionalism, expertise, dedication, creativity and commitment of each of the team members was essential to achieve the expected results.

In particular, to ensure the active participation of the financial institutions invited to the training and motivate them to continue exploring and learning about the opportunities that circular economy represents for the region and the role FIs have in the promotion of sustainable development and the financing of solutions that respond to the environmental and social challenges the region is facing.

- Mabel González, LAC Regional Lead at UNEP FI

Related project: Circular Economy Financing in Latin America and the Caribbean

"I've had the pleasure of working with the BASE team since 2022 through the Cooling as a Service program. Our shared commitment to clean cooling, decarbonisation, and innovation has driven significant impact in the commercial and industrial cooling sectors, as well as cold chain solutions in agriculture.

BASE's dedication to creating sustainable impact in these areas is truly inspiring. It's a privilege to be associated with, and contribute to, BASE's work"

- Axum Teferra, Senior Associate Director, Clean Cooling Collaborative, ClimateWorks Foundation

Related project: Your VCCA Onboarding Kit and Open-Source Code

Testimonials

From beneficiaries of our projects

The Your VCCA project by BASE and Empa, focused on using refrigerated containers to preserve post-harvest agricultural products in Guinea-Bissau, stands as a cornerstone for the country's economic and social development. This is very important. Beyond improving the quality of local produce, the project is set to boost productivity and drive economic growth. With the training received so far, we are now equipped to ensure sound, transparent management through the incorporation of digital tools and inspiring sustainable leadership for the project.

- Recipient of Cold Room Management Training in Guinea-Bissau delivered by the Your Virtual Cold Chain Assistant (YourVCCA) project

In collaboration with BASE, starting 2023, we took on the challenge of developing a green sectoral taxonomy, marking a milestone in the classification of green credit operations for private banks in Ecuador. BASE's solid experience, extensive technical knowledge, and professional work were instrumental in the successful creation of this tool, aimed at strengthening the financing of productive sectors committed to combating climate change and reducing environmental impact, while also serving as a foundation for the development of Ecuador's future national taxonomy.

- Roberto Romero, Director of Public Affairs at Asociación de Bancos Privados del Ecuador (ASOBANCA), supported by the Green Taxonomy of Ecuador's Private Banking Sector project

Working with BASE has been an outstanding experience. Their professionalism stood out from the start as the talented young team consistently developed tailored materials that perfectly aligned with our project's unique goals. What truly impressed us was their deep and considered understanding of the many complex and inter-related topics that now define the world of Impact Investing.

BASE's consistent dedication, keen insights, and collaborative approach made all the difference for our project, especially when faced with the many unique challenges that define our project.

- Mark J. Smyth, Director at CedarOxygen International

OUTLOOK 2025

Strategic Orientations

Since 2021, BASE strategically expanded its technical assistance from sustainable energy to encompass broader climate change solutions, actively venturing into new challenge areas. By 2024, significant conceptual advancements in driving capital towards climate resilience laid the groundwork for a greater focus on adaptation alongside mitigation.

These developments established the foundation for BASE's three key focus areas in 2025, highlighted below. To continually adapt to evolving climate challenges, BASE plans to proactively integrate emerging technologies, frameworks, and concepts into its climate finance innovations. These innovations will involve tailoring solutions to specific contexts, fostering collaborations with key partners to break silos, and championing the urgent need for a multi-sectoral approach to climate change.

To enhance its capacity and generate impact where it is most required, BASE will continue to proactively engage with key donors and establish strategic partnerships with entities that share its foundational principles and vision for a world championing people, planet, and equitable solutions to the climate crisis. Central to this strategy is nurturing long-term, trust-based relationships with a select group of institutional and philanthropic donors. This alignment is vital for securing BASE's ability to pursue new initiatives and broaden its reach.

As the climate finance sector evolves fast and technical solutions keep arising, BASE will, in addition to its existing priorities, specifically drive innovation in:

- **Financial structuring and de-risking mechanisms**, to catalyse investments into sustainable energy in difficult contexts, Nature-based Solutions, biodiversity conservation, and other ecosystem services.
- **Remittance-based climate finance,** to channel capital towards resilience solutions in Developing Countries,
- **Innovative business models for Sustainable agriculture & nature-based solutions**, to bring finance to nature-positive projects yielding dual benefits for people and the planet.

What We Will Build On In 2025

CONCEPTUALISING THE PHILANTHROPIC GUARANTEE

For a few years, BASE has been investigating the feasibility of unlocking financing in developing countries and in the broader impact investment sector through guarantee schemes. The perceived risks associated with investing in developing countries often lead to stringent conditions on the financing provided, like long tenures, overcollateralisation, or high interest rates, even though default rates are low. To cover potential losses and insufficient returns, BASE saw the opportunity to leverage a guarantee mechanism, backed by a pool of guarantors from the philanthropic sector.

Thus came about the idea of the Philanthropic Guarantee, which would serve as a financial safety net, providing reimbursement to investors if the impact lending fails to yield expected repayments and returns. By mitigating risks associated with such investments, the guarantee encourages capital mobilisation beyond the typical areas of investment. To overcome potential technical and operational challenges, the guarantee would pool pledges rather than actual funds. From the perspective of philanthropists, even a small pledge can create a significantly greater impact when aggregated with others to support a guarantee mechanism, rather than being allocated to a single project.

The guarantee not only aims to mainstream outcomes-based funding but also seeks to attract new stakeholders like insurers, enhancing the market for impact investments and fostering a deeper understanding of impact risks.

In 2024, BASE began collaborating with the **Global Platform for Action on Sustainable Energy in Displacement Settings** (GPA), the UN team responsible for the decarbonisation of humanitarian operations. Humanitarian installations, such as refugee camps, rely heavily on diesel generators for their operations, leading to high operational costs and dependence on the supply chain. Connecting to national grids is often not feasible due to high costs, poor infrastructure, and frequent outages. Transitioning to sustain-

able energy systems can help reduce costs, emissions, and operational burdens. Energy-as-a-Service (EaaS) contracts or solar power purchase agreements (PPAs) offer affordable solutions to access cleaner energy, as these models deliver services on a pay-per-use basis, lifting the requirement for any upfront cost. However, the "temporary" nature of humanitarian settings (despite an average lifespan of over 20 years for refugee camps) and short-term funding cycles, discourage investments in long-term sustainable energy infrastructure and prevent the signing of such agreements. A guarantee would address this by covering the early closure of the camps and the inability to amortise the energy assets installed by the provider.

2024 saw growing momentum around this project, fueled by renewed interest from the GPA and the **United Nations Development Programme (UNDP)**, which established together the **Decarbonising Humanitarian Energy Facility** (DHEF) to facilitate the transition of humanitarian organisations from diesel generators to solar photovoltaic (PV) systems, and the connections forged during the Building Bridges event (see above).

In 2025, BASE plans to focus on advancing this initiative. Piloting the guarantee within the context of refugee camps, in collaboration with the UN, would serve as a critical first step in demonstrating the concept's viability. Such a pilot has the potential to generate significant interest, paving the way for replication and scaling across a broader range of projects in the future.

BLENDED FINANCE FOR HABITAT BANKS & SHEA PARKLAND RESTORATION

Nature-based Solutions (NbS) represent an opportunity for BASE to broaden its impact through cross-cutting solutions at the intersection of financial innovation, biodiversity, adaptation, and mitigation.

With its deep expertise in business models and financing strategies, BASE is ideally positioned to accelerate Nature finance, utilising existing and new innovations to enhance financial flows towards Nature-based Solutions. Some concrete opportunities have already been identified. In 2024, BASE partnered with **Terrasos**, a pioneer in Colombia's biodiversity credit markets, establishing and managing Habitat Banks that integrate conservation with local economic development. Since 2017, with support from the IDB Group, Terrasos has successfully registered 13 Habitat Banks, protecting 7,288 hectares across five threatened ecosystems. These projects not only contribute to ecosystem restoration but also generate employment and economic opportunities for local communities.

In November 2024, BASE partnered with the **Global Shea Alliance** (GSA), a non-profit industry association with 849 members from 36 countries including women's groups, brands and retailers, suppliers and NGOs. As part of its sustainability programme, GSA seeks to restore 4,000,000 hectares of shea parklands in Ghana and across Africa's Sudano-Sahelian belt, such as through the **shea agroforestry farming model**. Despite the benefits of this model, widespread adoption has been hampered by the upfront costs faced by farmers as well as gender-related barriers, as women benefit from shea trees but are not traditionally able to make tree management decisions. Similarly, investment barriers tied to high-risk perception, lack of a clear business model, and negative country perceptions have limited the influx of private finance, whether from within the value chain or investment stakeholders.

Both cases demonstrate a common characteristic of NbS, namely that they lack immediate financial returns, making private capital reluctant to engage without strong de-risking mechanisms or means to improve the financial variability. To address this, BASE developed concept notes in collaboration with Terrasos and GSA featuring a philanthropic guarantee scheme and will seek to raise funds in 2025 to realise their implementation.

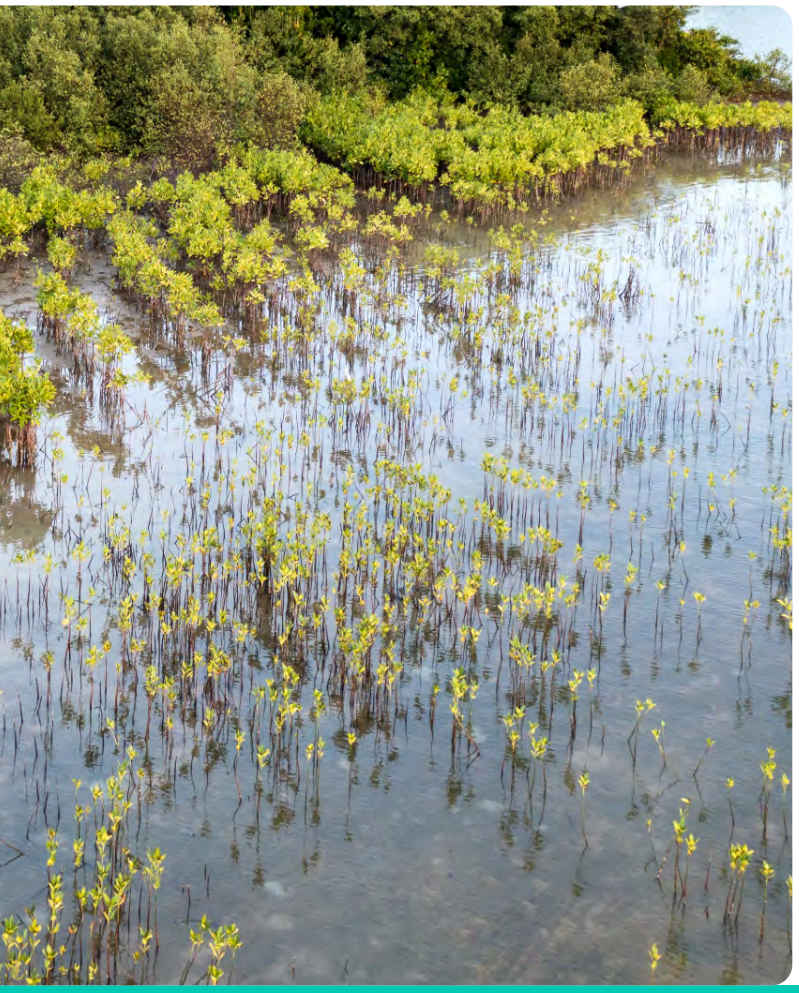
TREE-COLLATERAL FINANCE FOR FOREST LANDSCAPE RESTORATION

In addition to the establishment of these strategic partnerships and project development, the team engaged in discussions with relevant stakeholder groups, including practitioners in the field and pioneering researchers who have conducted conceptual and quantitative assessments of **tree collateral mechanisms**.

These discussions served to identify how to improve existing mechanisms to harness the innate liquidity of unconventional collateral like trees: once trees and forests represent assets of value in the market, they can be mobilised to constitute collaterals for different types of financing. A tree collateral mechanism would facilitate access to credits to small scale foresters who otherwise would not be able to do so and hence incentive investments in restoration activities and/ or sustainable forestry practices. However, several barriers impede the uptake of the mechanism.

In 2025, BASE will conduct a barrier and gap analysis of the current tree collateral approaches to develop a concept note for a project proposal with a mechanism and technical assistance scope that overcomes current impediments to successful uptake. In parallel BASE will strategically seek for an implementation partner. Research and pilot testing of the tree collateral mechanism has mostly been taking place in Southeast Asia, hence potential partners within this region will be approached.

In this way BASE has three project proposals in the pipeline across three Geographic locations - the Sahelian-belt, Latin America, and Southeast Asia.



Awareness raising & outreach

Next to the development of project proposals and partnerships, BASE has also undertaken several research efforts in the field of financing NbS, covering topics from financing strategies for landscape restoration to biodiversity credits, habitat banks and the role of blended finance solutions for restoration and conservation. In the effort to establish a network in the area of Nature Finance, the team also attended the Building Bridges Action days during November 2024 via which several relevant connections were made.

Furthermore, the team participated in workshops and events organised by key network platforms and initiatives for Nature Finance, such as the **Global Resilience Partnership, BIOFIN** and the **SDC Climate, DRR & Environment Network**.

BASE seeks to continue building a network and to raise awareness of its efforts in developing solutions for financing NbS, which ultimately contributes to building a reputation in this new challenge area.

Leveraging synergies with other relevant innovations at BASE

Other BASE innovations and associated learnings can be applied to the development of some project proposals related to Nature Finance described above.

This is, for instance, the case for the philanthropic guarantee for refugee camps, through which the team can infer key learnings for the development of de-risking mechanisms embedded in financing vehicles or investment strategies that target the mobilisation of private capital to restoration and conservation initiatives.

Over the course of 2025, the team will actively explore how learnings and efforts in the context of other innovations can be applied and integrated into project proposals in the area of Nature Finance.

ABOUT BASE

Established in 2001, BASE is a Swiss foundation and Specialized Partner of United Nations Environment.

We develop innovative, actionable financial strategies and market-driven solutions to unlock investment in climate change solutions. Around the world, we work with all markets and segments including those that are challenging and underserved.

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