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INTRODUCTION

OUR MISSION AND VISION

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

Our mission at BASE is to develop innovative, actionable financial strategies and market-driven solutions to unlock investment in sustainable energy and to tackle climate change. Around the world, we work with all markets and segments including those that are challenging and underserved.

Our vision is a world where markets are transformed, and sustainable energy and climate change solutions are the norm, not the exception.

OUR APPROACH

BASE combines expertise in technology, markets, economics, finance and business development to deliver effective solutions for every project. BASE builds bridges between sectors and actors at the nexus between sustainable energy, finance and international development. BASE seeks deeper solutions beyond the low hanging fruit, including markets that are challenging and underserved. The actionable solutions that we design, develop and implement seek to be disruptive, self-sustaining and replicable.

We develop innovative ideas and tailored market-driven solutions for public and private organisations. This involves more than just making financing available. BASE uses an integrated approach to drive investments in sustainable energy solutions and focuses on strategies that overcome key market barriers.

BASE meets its mission by delivering services in the following three service areas:

> Financial mechanisms and business models
> Green financing programmes for financial institutions and others
> Knowledge products and exchange.

THE PROBLEM

The need to reduce the financing gap to address climate change has never been more urgent.

Investment in low carbon energy, energy efficiency, and climate change adaptation are vastly insufficient to meet the global targets set out in the Paris Agreement and the Sustainable Development Goals. Greenhouse gas emissions are on the rise despite government commitments, which must now increase well beyond current carbon-cutting plans.

USD 110 trillion will be needed for investment in energy efficiency, renewable energy and the electrification of heat and transport measures in order to meet the target set out in the Paris Agreement, and limit the rise in global temperatures to well below 2 degrees Celsius above pre-industrial levels. This amount is significantly higher than the USD 95 trillion in currently stated commitments for climate actions from Paris Agreement signatory countries.

The financing needed to achieve stated and new goals is available from public and private sources but is not currently being effectively channelled to sustainable energy and climate change efforts. A recent Climate Policy Institute report indicates that mobilised climate finance in 2018 was only USD 546 billion. In terms of the needed USD 110 trillion scenario, this represents a required average of USD 3.3 trillion per year of climate financing.
HIGHLIGHTS OF 2019

During the 2019 financial year, there has been growth in activities across all areas and new innovative initiatives have been launched to drive investments in sustainable energy and tackle the challenge of climate change.

In 2019, BASE worked closely with the United Nations Environment, development agencies, development banks and other partners from around the world to pursue its mission.

In 2019, BASE and partners launched several new initiatives and projects and grew its portfolio of projects in Latin America, Africa, Asia, the Caribbean and Europe.

BASE worked in the following countries:

- Africa: Ghana, Rwanda, Senegal, Tunisia, South Africa and Sudan.
- Asia: India, the Maldives, Sri Lanka and Vietnam.
- Europe: Italy, Portugal and Spain.
- The Caribbean: Bahamas, Barbados, Dominican Republic, Jamaica and Saint Lucia.
- Latin America: Argentina, Chile, Colombia, Costa Rica, Ecuador, Jamaica, Mexico, Panama, Peru and Uruguay.

The map provides an overview of the country programmes by BASE and partners. In the following section, a selection of BASE’s highlight programmes of the year of 2019 is presented.
BASE'S PROGRAMMES

FINANCING RENEWABLE ENERGY

BASE develops innovative business models and financing mechanisms to unlock investment in renewable energy solutions for rural and urban areas, commercial, public and residential sectors.

1. INDIA RENEWABLE ENERGY IN BUILDINGS PROGRAMME

2. GCF PROPOSAL FOR RENEWABLE ENERGY IN THE MALDIVES
RENEWABLE ENERGY

INDIA RENEWABLE ENERGY IN BUILDINGS PROGRAMME

Supporting the integration of renewable energy in buildings in India.

DESCRIPTION

BASE is supporting a project consortium led by the International Institute for Energy Conservation (IIEC) to design, showcase and monitor two to three building integrated and innovative renewable energy technologies suitable to and affordable in the local condition and applicable for buildings in India.

BASE will leverage international knowledge on renewable energy technologies and develop financing mechanisms to scale up integrated renewable energy in buildings. BASE will support IIEC to establish partnerships between public and private sector agencies in India and Switzerland.

EXPECTED IMPACTS

The programme is expected to demonstrate in two buildings (pilots) the integration of renewable energy technologies, engage technology providers and provide guidelines on a business model and financial mechanisms.

PERIOD

2019 - 2021

COUNTRIES

India

PARTNERS

NA

FUNDER

IIEC and SDC

ROLE OF BASE

Providing support in technologies, business models and financing strategies.
RENEWABLE ENERGY

GCF PROPOSAL FOR RENEWABLE ENERGY IN MALDIVES

Developing a GCF proposal to scale-up renewable energy on inhabited outer islands in the Maldives

DESCRIPTION

BASE supported the UN Environment, and the Maldives Ministry of Environment and Energy to develop a Green Climate Fund (GCF) proposal to increase the share of renewable energy on inhabited outer islands. There are 194 inhabited islands in Maldives and a further 105 resort islands. Electricity demand is currently met almost entirely through imported fossil fuels.

The programme design and GCF Funding proposal were completed in 2019. The design includes three main components which together aim to deliver long-term transition to renewable energy systems: 1. Innovative financing mechanisms including an on-utility bill repayment model; 2. Technical assistance; 3. Awareness raising.

The Maldives Ministry of Environment and Energy is still in the process of identifying and engaging an accredited entity.

EXPECTED IMPACTS

The programme is expected to reduce greenhouse gases (GHG) emissions significantly, given that the current electricity generation is almost entirely reliant on imported fossil fuels (predominantly diesel).

The programme is also expected to reduce government expenditure on electricity subsidies, reduce air pollution, and reduce household and Small and Medium-sized Enterprises (SMEs) utility bill costs.

PERIOD
2018 - 2019

COUNTRIES
Maldives

PARTNERS
UN Environment
Maldives Ministry of Environment

FUNDER
UN Environment

ROLE OF BASE
Leading the full GCF proposal
BASE’s Programmes

Financing Energy Efficiency

BASE develops innovative business models and financing mechanisms to mobilise investments in energy efficiency, including sustainable cooling solutions, for enterprises, public buildings and households.

1. Energy Savings Insurance Europe
2. Rwanda and Caribbean Cooling Initiative
3. Cooling as a Service Initiative
4. Rwanda Cooling Finance Initiative
5. EcoFridge Initiative in West Africa
6. Efficiency for SMES in Colombia and Peru
ENERGY EFFICIENCY

ENERGY SAVINGS INシュRANCE EUROPE

Scaling up investments in energy efficiency in SMEs in Europe.

DESCRIPTION

BASE received funding from the European Commission’s Horizon 2020 Programme for the replication in Europe of the ESI model, a mechanism developed by BASE and already operational in Latin America (coordinated by the Inter American Development Bank).

The project aims to motivate Small and Medium-sized Enterprise (SMEs) in Italy, Portugal and Spain to invest in energy efficient equipment by a comprehensive strategy that includes mechanisms to reduce risk perception on the return of investment, facilitating financing and positioning energy efficiency as an attractive investment opportunity. The model is integrated by different mechanisms that include a standardised contract, an energy efficiency insurance, project validation processes, suitable financing products and a marketing strategy.

The project requires the engagement of technology providers, insurance companies, banks, associations of potential clients (e.g. hotel association of Portugal). The project includes the development of a Management Information Systems (MIS) to register and track the evaluation, monitoring and reporting of energy efficient project investments. The MIS is designed in block-chain (one of the first global applications in energy efficiency). The objective is that technology providers use the ESI model as a tool to convince their clients to invest in energy efficiency. Therefore, the model becomes self-sustaining in the long term.

BASE created a commercial brand for the ESI Europe project, namely “GoSafe with ESI”, which has been registered at the European Union Intellectual Property Office. Accompanying marketing material has been prepared to circulate in Italy, Portugal and Spain including a website, explanatory videos, brochures, roll-ups etc. Lastly, our local partners are starting to build the pipeline of energy efficiency investment projects.

In addition to those tasks, the project also includes capacity building activities for the different key actors in the market: technology providers,
financial institutions and SMEs; and the development of long-lasting tools for the replication of the ESI model (toolkit and video). Communication and dissemination activities are also part of the project and include the preparation of articles, videos and participation in events.

The project counts with two websites and social media channels:

> www esi europe org (available in English, Italian, Portugues and Spanish)
> www gosafe esi com (available in Italian, Portugese and Spanish)
> LinkedIn (https://www.linkedin.com/company/gosafe-esi/), and
> Twitter (https://twitter.com/GoSafewithESI).

Some of the actors already engaged:

> Insurance companies: CESCE (Spain, Portugal) – MoU.; Crédito y Caución (Spain, Italy); Ageas, Fidelidade (Portugal); Abarca Seguros (Portugal, Spain and Italy); Reale Mutua (Italy)
> Lawyers: firms (one for each country) to develop the standardised contracts
> Banks: Local banks offering credit lines for energy efficient and/or SMEs, European Investment Bank
> Validation entity: SGS (HQ in Geneva)

**EXPECTED IMPACTS**

The programme is expected to mobilise EUR 62 million during project period, reduce 27,481 tCO2 emissions a year (93.6 GWh/y of primary energy saved) and engage 1,665 stakeholders to be trained and with increased capacity.
ENERGY EFFICIENCY

RWANDA AND CARIBBEAN COOLING INITIATIVE

Supporting the transition to environmentally friendly and energy efficient refrigeration and air conditioning technologies in Rwanda and the Caribbean.

DESCRIPTION

The Caribbean Cooling Initiative (C-COOL) and Rwanda Cooling Initiative (R-COOL) were launched in early 2018 with the aim to support the transition of these markets to environmentally friendly and energy efficient refrigeration and air conditioning technologies. C-COOL and R-COOL resulted in the creation of National Cooling Strategies including policy recommendations such as for Minimum Energy Performance Standards (MEPS) and labeling, as well as the development of a financial mechanism for the Caribbean and one for Rwanda.

BASE was in charge of developing an effective financing strategy to scale up investment in energy efficient cooling systems in the Caribbean and in Rwanda. To do so, BASE started by conducting market assessments to identify the market size and sectors with opportunities, identify the key barriers to investment, and collect information about available technology in the respective markets and about the key actors from the demand, supply and finance side. Based on these findings, the financial mechanism “Coolease” was developed in Rwanda, and the financial mechanism “Cooling as a Service (CaaS)” was developed and implemented in Dominican Republic and Jamaica in collaboration with local, regional and global technology providers, investments funds, and other partners.

Cooling as a Service in the Caribbean

The key implementation partners in Dominican Republic was the global air-conditioning solution provider Daikin Applied Latin America (Daikin) and its local subsidiary SAEG. In Jamaica, the key partners were the investment fund Caribbean Basin Sustainable Energy Fund (CABEF) and several local contractors. These stakeholders received technical support from BASE to integrate the model into their business lines and are now fully equipped to pilot the CaaS model in the respective countries. The technology providers have started creating a pipeline and approach-

PERIOD
2018 - 2020

COUNTRIES
Bahamas, Dominican Republic, Jamaica Barbados, Rwanda and Saint Lucia.

PARTNERS
UN Environment and U4E

FUNDER
K-CEP and UN Environment

ROLE OF BASE
Lead the development of the financial mechanisms.
ing customers who positively responded to the opportunity to engage in a CaaS contract. Overall, the financial mechanism developed within C-COOL has gained significant traction across the region. A toolkit including contractual arrangements, economic models, funding structures and explanatory documentation was developed and made publicly available to enable stakeholders from other countries within and beyond the scope of C-COOL to implement the models. Events, workshops and webinars were organised to raise awareness and build capacity about the financial mechanism. For instance, in May 2019 BASE launched Cooling as a Service as a commercially available product in Dominican Republic together with Daikin in front of 80+ hotel representatives at the UN Sustainable Tourism workshop in Punta Cana.

Coolease in Rwanda

In Rwanda, BASE engaged the Business Development Fund of Rwanda (BDF) and the Green Fund of Rwanda (FONERWA) to develop the financial mechanism Coolease in collaboration with local, regional and global technology providers, and other partners. The leasing product for energy efficient air-conditioning and refrigeration was designed within BDF’s leasing unit and the Green Guarantee Fund by FONERWA was positioned to support the mechanism. The funding structure, internal processes and eligibility criteria for the mechanism were defined with BASE’s support and the mechanism was officially launched in June 2019, ready for implementation by BDF. The Coolease financial mechanism for commercial customers was met with a lot of enthusiasm, as the launch meeting included Minister of Environment Dr. Vincent Biruta who gave opening remarks, C-level executive representatives from the government and the private sector, including the development bank of Rwanda, investment funds, commercial banks, utilities and technology providers with thorough press coverage.

BDF and FONERWA have a strong interest in piloting the mechanism, and have defined a working plan to anchor, set up and operationalise the leasing unit, onboarding coolease as one of the products. BDF has taken ownership of the coolease product, ensuring continuity beyond the R-COOL program and successful roll-out.

EXPECTED IMPACTS

The programme put in place a financing strategy that is able to scale up investments in energy efficient coolings system, and engage financial institutions and technology providers. The program is expected to mobilise funding to energy efficient cooling systems and reduce CO2 emissions.
ENERGY EFFICIENCY

COOLING AS A SERVICE INITIATIVE

Scaling up investments in clean and energy efficient cooling systems.

DESCRIPTION

BASE is leading the Cooling as a Service (CaaS) Initiative with the aim to scale up the adoption of clean and efficient cooling through the mainstreaming of the innovative business model CaaS developed by BASE, which is based on a pay-per-service strategy. In December 2018, BASE launched the CaaS Initiative Phase 1 which is ongoing until January 2021, and the success of the programme led to Phase 2 which started in September 2019. The CaaS Initiative is part of the efforts supported by the Kigali Cooling Efficiency Program (K-CEP) to phase-out harmful cooling refrigerants from the market.

The CaaS model overcomes key market barriers and aligns incentives, supporting customers to benefit from high-end, energy efficient cooling and thus lowers energy and operating costs, with no upfront investment. The model includes financial structures to recapitalise CaaS providers.

The initiative includes the following components and tasks:

1. BASE has been developing tools to enable the model such as CaaS contracts, pricing models, and financial structures to monetise CaaS projects. BASE has developed local contracts for Jamaica, India and South Africa.

2. BASE is working with technology providers and investment funds to test the model in Latin America, Africa, and Asia. Pilot projects are underway in Mexico, South Africa and India.

3. BASE has created partnerships with different actors to establish the CaaS Alliance, which today includes almost 40 organisations, including global, regional and local technology providers such as Daikin, Johnson Controls, Trane; investment funds such as ResponsAbility and SDCL; and networks such as the World Green Building Council and the World Bank’s ESMAP to help raise awareness about the model.

**PERIOD**
2018 - 2021

**COUNTRIES**
India, Mexico and South Africa.

**PARTNERS**
NA

**FUNDER**
K-CEP

**ROLE OF BASE**
Programme coordinator
4. One of the programme goals is to spread the word about the model and build capacity through events, workshops, webinars, publications (articles, case studies), audiovisual material (podcasts, videos) and collaborations with networks. BASE also created the CaaS website www.caas-initiative.org and the CaaS video.

In 2019 BASE presented the CaaS model to the Global Innovation Lab for Climate Finance (The Lab) and the model was endorsed as one of the most innovative, scalable and actionable financial instruments of 2019 to drive climate action. More information, including the full instrument analysis, is available on The Lab’s website.

EXPECTED IMPACTS

The programme is expected to mobilise USD 15-45 million towards energy efficient cooling through pilot and demonstration projects.

The programme is also expected to mobilise further USD 10-30 million within 5 years after the project period.
ENERGY EFFICIENCY

RWANDA COOLING FINANCE INITIATIVE

Supporting the transition to energy-efficient and climate-friendly domestic refrigeration and room air conditioning solutions in Rwanda.

DESCRIPTION

BASE is working alongside United for Efficiency (U4E) initiative and partnering with the Government of Rwanda, East African Centre of Excellence for Renewable Energy and Efficiency (EACREEE), Rwanda Energy Group (REG) and Energy Utility Corporation Limited (EUCL), as well as the Development Bank of Rwanda (BRD) to deploy R-COOL FI On-bill financing that aims to scale up investments in new energy-efficient and climate-friendly domestic refrigeration and room air conditioning solutions in Rwanda, prepared as part of the second phase of the Rwanda Cooling initiative (R-COOL).

R-COOL FI On-bill financing is an innovative mechanism that allows Rwandan households to obtain green loans from partner financial institutions and allow the low-risk credit recovery through their electricity bills. R-COOL FI includes complementary components, notably the proper disposal of used appliances, product testing, monitoring and verification, policy considerations, and awareness campaigns.

R-COOL FI On-bill financing overcomes key barriers that are the burden of upfront investment and the need for collaterals and thus reduces the need for stringent credit assessment and collaterals. A simple review of bill payment history, income and other basic information is used to determine eligibility for financing. A financial tracking tool is used to follow repayment progress and program operations to assure the viability of the mechanism over time.

R-COOL FI On-bill financing is a one-stop solution for the EUCL’s electricity utility residential customers, connecting with partner local financial institutions and vendors who are both acting as facilitators, doing the initial processing of the customer information and application, aligned with R-COOL FI eligibility criteria and requirements.

R-COOL FI facilitates the creation of a pipeline for energy efficiency

PERIOD
2018 - 2020

COUNTRIES
Rwanda

PARTNERS
UN Environment, U4E and BRD.

FUNDER
K-CEP and UN Environment

ROLE OF BASE
Leading development of the financial mechanism.
investment, improves the monitoring and reporting of green loans and sales of energy efficient cooling products, significantly ease access to energy efficient cooling, tackles the issues of collection and disposal of used products, open access to new green markets for partners, and thus will possibly attract international funding to scale up the financial mechanism.

Building on existing regional efforts on market surveillance and enforcement, R-COOL FI includes robust qualification procedures to ensure that only energy-efficient and climate-friendly products are eligible for the financial mechanism. Technical specifications are defined to indicate minimum performance levels, features and other considerations for product to be eligible for the financial mechanism. A sample of products is tested to verify compliance. New product sales and the submission of old refrigerators are regularly checked to evaluate the project’s impacts. Additional policy recommendations that support the use of the financial mechanism are also provided.

R-COOL FI was launched during an inception mission to Rwanda in June 2019 with key government agencies and stakeholders. A presentation of the mechanism was done in front of an executive audience including CEOs of BRD, REG, EUCL and the Minister of Environment.

In the successive months, a market assessment including an extensive household survey was conducted to identify the barriers and opportunities for domestic cooling in the residential sector. In December 2019, key findings were presented informing the proposed design of R-COOL FI On-bill financing. The concept was validated during in-country stakeholder consultations with public institutions, technology providers, and local financial institutions.

R-COOL FI On-bill financing is now being developed and operationalised with EUCL, as well as partner local financial institutions and vendors by fall 2020.

**EXPECTED IMPACTS**

The programme expects to unlock USD 4 million in financing from BRD and/or partner local financial institutions through On-bill financing and finance 8000 energy efficient refrigerators or 4000 energy efficient AC units by 2024.
ENERGY EFFICIENCY

ECOFRIDGES INITIATIVE IN WEST AFRICA

Supporting the adoption of clean and energy efficient domestic refrigerators and room ACs in Ghana and Senegal.

DESCRIPTION

As part of K-CEP’s 3rd window, BASE is working alongside UN Environment’s United for Efficiency (U4E) initiative and partnering with the governments of Senegal and Ghana, Renewable Energy and Energy Efficiency (ECREEE) and the African Development Bank to design, develop and implement innovative financial mechanisms for residential sector to accelerate the switch to energy-efficient and climate-friendly domestic refrigeration and room air conditioning solutions in the region.

The ECOFRIDGES project was successfully launched by BASE and U4E and the Government of Senegal at the inception meeting in Dakar in May 2019. The launch was widely covered by the local media (including press articles and TV news reports) and with more than 40 participants including the Senegalese Ministries of Petroleum and Energy, the Ministry of Environment and Sustainable Development, AEME, the African Development Bank and other key stakeholders.

After leading and conducting market assessments and extensive household surveys in both countries, BASE presented in November 2019 key findings informing the proposed design of ECOFRIDGES respective financial mechanisms: Green On-wage financing (GO) in Ghana and On-bill financing in Senegal during stakeholder consultations. Both financial mechanisms are now being operationalised and will be piloted with selected partners by fall 2020.

Both mechanisms are building on lessons from Ghana and others’ successful policies and link with activities underway by ECREEE to spur the adoption of superior cooling solutions. ECOFRIDGES includes complementary components, notably the proper disposal of used appliances, product testing, monitoring and verification, policy considerations, and awareness campaigns.

In Ghana, ECOFRIDGES Green On-wage financing (GO) is a bank loan product designed to address the short to medium term financing needs...
of public and private sector employees through salary deductions to support the replacement of used but operational equipment with a certified cooling systems solution without the burden of upfront investment and the need for collaterals. The employer entity is the guarantor of the salaried customer’s loan and the mechanism reduces the need for stringent credit assessment and collaterals.

In Senegal, ECOFRIDGES On-bill financing gives consumers the option to finance the purchase through monthly payments on their electric utility bills, or other channels that meet the country-specific needs. With the support from AEME, BASE and U4E aim to secure a partnership with the public electricity utility - SENELEC and kick start the operationalisation of the mechanism in 2020. The aim is to launch the mechanism with partner local financial institutions and vendors in a pilot phase by fall 2020. Then, by 2021, it is planned that the mechanism will be fully integrated with the concessional financing of AEME’s energy efficient lighting program and be scaled up with support from AfDB.

**EXPECTED IMPACTS**

The programme is expected to replace 23,600 old domestic refrigerators and room ACs with energy-efficient and climate-friendly cooling products and unlock USD 8.4 million in financing with Green On-wage financing mechanism and On-bill financing mechanism.
ENERGY EFFICIENCY

EFFICIENCY FOR SMES IN COLOMBIA AND PERU

Mobilising SME investment in environmental efficient technologies in Colombia and Peru.

DESCRIPTION

The project aimed to design a financing instrument for each country to support and motivate Small and Medium-sized Enterprises (SMEs) in Peru and Colombia to invest in energy efficiency. The financing strategy aims to transform the market, provide a sustainable strategy and engage technology providers, government and financial institutions.

BASE supported the Swiss State Secretariat for Economic Affairs (SECO) to structure and successfully leverage the funding of SECO with other investors to a total of USD 45 million. BASE held workshops with actors in Colombia and Peru to discuss and receive feedback on the proposed national strategies. Both of the strategies proposed have been very well accepted by the key market actors and the local public authorities, and there is a strong interest in their implementation.

In Colombia it was proposed a payment guarantee to motivate the providers to offer servitisation model for SMEs to facilitate access to energy efficiency equipment. The government of Colombia has committed to leverage the funds of SECO and manage the payment guarantee.

In Peru it was proposed a credit guarantee to facilitate access to credit to SMEs to acquire energy efficiency and other environmentally friendly technologies. BASE has managed to negotiate with SECO has approved the funds to start developing and implementing the financing instrument in Peru in 2020; the financing instrument in Colombia is on-hold until further notice. BASE will support the development and implementation phase of the instrument in Peru.

EXPECTED IMPACTS

The programme is expected to mobilise USD 70 million and reduce 83,000 tCO2/yr.
BASE’S PROGRAMMES

FINANCING ELECTRIC MOBILITY

BASE develops tailor-made business models and financing mechanisms, working closely with the public sector, to make investment in hybrid and electric mobility solutions in cities more attractive to investors.

1. FINANCING FOR ELECTRIC BUSES IN SAN JOSE
2. FINANCING FOR ELECTRIC BUSES IN BUENOS AIRES
3. FINANCING FOR ELECTRIC AND HYBRID BUSES IN COLOMBIA
4. FINANCING FOR ELECTRIC BUSES IN LIMA
5. GCF CONCEPT NOTE FOR ELECTRIC VEHICLES IN SRI LANKA
FINANCING FOR ELECTRIC BUSES IN SAN JOSE

Supporting the government of Costa Rica in developing business models and financing mechanisms for the massification of electric buses.

DESCRIPTION

BASE is supporting the Inter-American Development Bank (IDB) and the Presidency of Costa Rica on the transition program of the current diesel bus fleet into electric.

The project has been divided in two stages.

The first stage will provide technical assistance and guidance for preparing the development of the initial phase of the bus fleet transformation project in San Jose. BASE is currently supporting the implementation of a pilot test program of 11 electric vehicles by providing technical guidelines to the involved operators on vehicle specifications based on technical evaluations such as road and route characteristics, operational logistics and charging infrastructure. The guidelines include an economic evaluation to justify each option and a protocol to standardised proposed tests.

The second stage will provide short- and medium-term business models, financial and mechanisms and risk mitigation instruments for a large scale acquisition of electric buses and will provide a road map for the transition of the country’s entire fleet of buses for public transport.

EXPECTED IMPACTS

The project is expected to mitigate uncertainties in electric technology and enable the investment of USD 4 million for the purchase of 11 electric vehicles participating in the pilot test.

The programme also expected to transform all of the public transport fleet of buses into electric, which requires an investment of approximately USD 1.5 billion distributed in 12 years.
FINANCING FOR ELECTRIC BUSES IN BUENOS AIRES

Supporting the city of Buenos Aires in analysing the feasibility of Electric buses to replace diesel buses and proposing a financial strategy for the bus owners.

DESCRIPTION

BASE supported the Inter-American Development Bank (IDB) and the Secretariat of Transport of Buenos Aires to develop a strategy to scale up investments in electric buses in Buenos Aires, Argentina.

BASE was in charge of analysing the economic feasibility of electric buses for urban transportation systems and comparing the economic analysis of different electric buses with gas buses and diesel buses. The project also involves proposing a financial strategy and business models to increase the return of investment of these technologies and reduce the risk perception and analysing different charging and batteries configurations. The project was presented to government authorities, operators and financial institutions in November 2019.

The project informed Buenos Aires’s Transport Secretariat and IDB about the business model required to incentivise the transition and about the level of investment required to finance a fleet of 300 electric buses. BASE estimations indicated that under the current income structure, electric buses are about 10 percent more expensive than diesel buses. Furthermore, due to high interest rates in Argentina over 65 percent, it was recommended that the government compensates the interest rate to reduce it to at least 17 percent. The cost of the compensation was estimated to be 31 percent of the total investment (bus, batteries and charging infrastructure).

EXPECTED IMPACTS

The project is expected to provide advice on enabling mechanisms (technical, financial and on policy) to unlock an initial investment of approximately USD 100 million for 300 electric buses for the city of Buenos Aires. It is also expected to mobilise investments and reduce approximately 270,000 tCO2 during the lifetime of 300 vehicles.
ELECTRIC MOBILITY

FINANCING FOR ELECTRIC BUSES IN LIMA

Developing a financial strategy and business model to scale up investments in Electric Buses.

DESCRIPTION

BASE worked with the Inter-American Development Bank (IDB) and the Ministry of Energy to develop a financial strategy for electric buses in Lima, Peru.

BASE was in charge of analysing the economic feasibility of electric buses for urban transportation systems in Lima and the different charging and battery configurations, as well as comparing the economic analysis of different electric buses with gas buses and diesel buses. The project involved proposing a financial strategy and business models to increase the return of investment of these technologies and reduce the risk perception.

The project has been presented to government authorities, operators and financial institutions. It was well received and the local partners are looking into opportunities to continue working with BASE into the implementation phase.

As a result the Ministry of energy launched a press release informing about the result of the technical support. Furthermore, IDB released a technical note “Análisis y diseño de modelos de negocio y mecanismos de financiación para buses eléctricos en Lima, Perú” about the business models and financial mechanisms proposed for Peru.

Some of the actors already engaged: BYD, Yutong, Zhongtong and QEV (key bus manufacturers), national Bus distributors, bus operators, local financial institutions, Lima’s municipality and COFIDE – National Development Bank

EXPECTED IMPACTS

The project is expected to mobilise investment and finance for the replacement of 100 buses to electric buses and reduce approximately 100,000 tCO2 during the lifetime of the vehicles.
ELECTRIC MOBILITY

FINANCING FOR ELECTRIC AND HYBRID BUSES IN BOGOTA

Supporting the city of Bogota to redesign a compensation framework for the bus operators to invest in electric buses.

DESCRIPTION

BASE supported the Inter-American Development Bank (IDB) and the municipality of Bogota through Transmilenio (administration entity) to develop a strategy to scale up investments in electric buses for the Integrated Transport System in Bogota, Colombia.

BASE was in charge of analysing different typologies of urban buses: 80, 50, 40 and 19 people and to propose a specific remuneration mechanism for electric vehicles thus stimulating transition. This consultancy prepared a detailed technical sheet of costs associated with electric vehicles and designed a mechanism that Transmilenio will use to repay the investment of the vehicles and charging infrastructure during 15 years. Part of the activities involved:

> Perform TCO calculations (Total cost of ownership) among available technologies diesel bus, CNG and electric bus.

> Provide an investment plan and a tailored compensation scheme for electric buses.

> Provide financing structures and models to support bus operators to acquire electric buses.

> Provide risk mitigation possibilities (credit guarantees and insurance) to reduce risks.

The project was presented to authorities, operators and financial institutions in July 2019. As a result of the project, the city of Bogota launched the first ever tender exclusively on electric buses in South America.

EXPECTED IMPACTS

As a result, over 400 buses have been financed and have mobilised investment of USD 140 million. It is expected to reduce 390,000 tCO2 during the lifetime (15 years) of the 400 vehicles.
ELECTRIC MOBILITY

GCF CONCEPT NOTE FOR ELECTRIC VEHICLES IN SRI LANKA

Developing a GCF Concept Note to support the transformation of Sri Lankan transport sector to electric mobility.

DESCRIPTION

BASE worked with UN Environment and their local counterparts Janathakshan (GTE) to support, analyse and develop a Green Climate Fund (GCF) Concept Note for a project entitled Transforming Sri Lanka Transport Sector to Electric Mobility.

The proposed project aims to demonstrate that electric buses can replace the current inefficient fleet of diesel buses, and to show that it is feasible to establish renewable energy charging stations that help to establish a cleaner and more stable grid.

The buses have a swapping battery technology that allows replacement of the battery in less than three minutes once the battery is discharged. The batteries are charged at strategic distributed charging stations that are powered by renewable energy sources, the charging stations provide an automated system to replace the bus batteries when they require a new batch of charged batteries.

The programme will help to stimulate the local market for the use of electric busses and the infrastructure to feed into nodes of the upcoming Colombo Light Rail Transit (LRT) System in Sri Lanka.

EXPECTED IMPACTS

The project is in line with the Government of Sri Lanka’s GHG emissions reduction targets, as set out in the Nationally Determined Contribution (NDC) to the UNFCCC and is expected to save 2,628 tCO2eq for 20 buses, and 13,144 tCO2eq for 100 buses over the lifetime of the pilot (15 years).
BASE supports financial institutions and others to access climate finance and develop effective green finance products for climate change mitigation and adaptation.

1. **Green Credit Lines in Latin America**
2. **Green Credit Lines for SMES in Panama**
3. **Revolving Loan Fund for Energy Efficiency in Costa Rica**
4. **Green Neighbourhood Approach in Lebanon**
5. **GCF Advisory Work for Sudan, Tunisia and Vietnam**
6. **G20 Support**
GREEN CREDIT LINES IN LATIN AMERICA

Developing a green climate financing facility for financial institutions in Latin America.

DESCRIPTION

BASE supported CAF – the Development Bank of Latin America – to develop a Green Climate Fund (GCF) proposal for 16 local financial institutions in six different countries across Latin America. BASE has designed the programme and the financing structure for the project.

The programme has a focus on energy efficiency, renewable energy and land sector mitigation projects in Panama, Ecuador, Peru, Uruguay, Paraguay and Chile. BASE worked together with Unique LTC, in Germany, who has expertise on land use and forestry sector mitigation projects, to prepare their component of the proposal. The proposal has received positive feedback and funding from the GCF Board.

EXPECTED IMPACTS

The programme expects to mobilise a total volume of USD 236 million, which include USD 190 million of loans from local financial institutions, and additionally USD 46 million of private capital provided by SMEs.

The project is expected to reduce 15 million tons CO2 emission during programme lifetime (15 years) and reduce 208 GWh per year through energy efficiency and renewable energy investments.
GREEN CREDIT LINES FOR SMES IN PANAMA

Supporting a commercial bank in Panama in the development of their green and SME financial strategy.

DESCRIPTION

The overall objective is to support a commercial bank based in Panama - St. Georges bank - on strengthening their sustainability policy, their environmental and social risk management system, propose processes and tools to simplify and streamline Small and Medium-sized Enterprises (SME) credit approval, as well as the identification and management of green investments in that segment.

BASE has been working with the bank in the following:

- Design and implement simplified SME credit analysis and approval processes in St. Georges;
- Design a Sustainability Policy and a Corporate Sustainability Plan that sets out the general vision, the long-term objectives and the actions that must be carried out by the bank in the short and mid-term;
- Design processes for identifying green investments in SMEs;
- Analyse and propose policies, processes, and risks to improve the identification and management of social, environmental and climatic risks associated with SMEs;

EXPECTED IMPACTS

The programme expects the bank to implement sustainability policies, incorporate social and environmental aspects in the risk assessment, strengthen access to credit to SMEs in Panama, establish a process to build the green portfolio of the Bank and put in place Measurement, Reporting and Verification (MRV) of greenhouse gas (GHG) mitigation. As well as to build the capacity of key staff to implement recommendations and raise awareness and interest to implement a dedicated green financing product.

PERIOD
2019 - 2020

COUNTRIES
Panama

PARTNERS
NA

FUNDER
IDB Invest

ROLE OF BASE
Programme lead
CLIMATE FINANCE

REVOLVING LOAN FUND FOR EFFICIENCY IN COSTA RICA

Supporting CABEI (Central America Bank for Economic Integration) to design a financial strategy to scale up energy efficient equipment in public buildings.

DESCRIPTION

BASE is supporting UN Environment to design a revolving loan fund for the project development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica. The project aims to accelerate improvements in energy efficiency under public procurement programs and to reduce energy consumption and CO2 emissions.

The design of the energy efficiency revolving loan fund (EE-RLF) will include the assessment of the legal, financial and operational aspects of the revolving loan fund to ensure the sustainability of large-scale replacement programs in the public sector and the deployment of accounting, auditing and control systems to ensure its transparency.

EXPECTED IMPACTS

The programme expects to mobilise USD 10 million by the designing of a financing instrument that is self-sustaining to support public entities in replacing inefficient equipment by high efficient systems.

PERIOD
2018 - 2021

COUNTRIES
Global

PARTNERS
NA

FUNDER
UN Environment

ROLE OF BASE
Providing expertise in developing a financial strategy and a revolving fund.
CLIMATE FINANCE

GREEN NEIGHBOURHOOD APPROACH IN LEBANON

Designing a financing strategy to finance green neighbourhoods in Lebanon and engage the public and private sector in providing services and financing.

DESCRIPTION

BASE is developing a proposal to the Green Climate Fund (GFC) that aims to put in place financial support and implement a Programme that supports neighbourhoods in Lebanon to become green neighbourhoods (for example around the Beirut River, such as Hazmieh, Forn el Chebbak, and Sin el Fil to Bourj Hammoudand Beirut). The programme would include a strategy to engage the private sector, municipalities and households. Furthermore, it aims to engage and work in close collaboration with the local utility and align current initiatives, efforts and regulation (e.g. Electricite du Liban net metering policy).

The goal of the programme is to benefit the neighbourhood residents with a reduced electricity bill, much better quality and reliability of the electricity service, an improvement of air quality and reduce reliance on diesel generators.

The funding proposal aims to raise between USD 30 and 60 millions of reimbursable funding form the GCF and co-funding from the lead financial entity and additionally some grants so support the development and implementation of the Programme. This amount would be fine tuned according to the results from the market assessment.

The objective is to submit this proposal with all secured partners and NDA non-objection letter by mid 2021.

EXPECTED IMPACTS

The programme is expected to develop a market assessment and a financing strategy and business model that is able to engage the different stakeholders in financing green neighbourhoods. The funding proposal will be put in place to be evaluated by the GCF in 2021.
CLIMATE FINANCE

GCF ADVISORY WORK FOR SUDAN, TUNISIA AND VIETNAM

Support development of GCF concept notes in Sudan, Tunisia and Vietnam.

DESCRIPTION

BASE is working with UN Environment supporting the Finance Unit’s mitigation concept note development of the activities in line with selected countries’ technology needs assessments (TNA) and the progress of a GCF energy access proposal in Sudan.

BASE reviewed the GCF project proposal of the UN Environment in Sudan and developed two mitigation concept notes in consultation with the Finance Unit and stakeholder countries. BASE was also involved in preparing a work plan for the assignment, assessing the TNA outputs and shortlisting two mitigation concept ideas for further elaboration and development.

BASE and UN Environment had scoping missions in Vietnam end of May 2019 and in Tunisia in June 2019 to discuss high potential mitigation technologies identified through Vietnam and Tunisia’s UNFCCC Technology Need Assessment (TNA) and the feasibility of developing a project. The meeting involved consulted many governmental agencies, technical and financial stakeholders, and potential partners/donors to support the concept of energy efficient transformers for industries in Vietnam and energy efficient electric motors for SMEs in Tunisia.

BASE shared the final concepts to UN Environment in August 2019. Both concepts were also submitted to SECO’s Infrastructure Financing and Private Sector Development teams for potential support. Lately, the concept note for Tunisia was being incorporated into a GCF Readiness regional proposal by UN Environment in October 2019.

EXPECTED IMPACTS

The programme will support and explore future potential opportunities and has been useful to strengthen the position of BASE and UN Environment to start discussions with donors and new opportunities.

PERIOD
2018 - 2019

COUNTRIES
Sudan, Tunisia and Vietnam

PARTNERS
UN Environment

FUNDER
UN Environment

ROLE OF BASE
Project team member
CLIMATE FINANCE

G20 SUPPORT

Developing a concept note for the G20 Global Summit on financing Energy Efficiency.

DESCRIPTION

The G20 Energy Efficiency Finance and Investment Stocktake Report provides a large range of case studies from banking, investment, promotional banks and policymaking, which have converged on the need for greater transparency of financial markets regarding the contribution of energy efficiency to credit quality and collateral value.

The key challenge was to succinctly summarise and structure the large range of inputs collected by the G20 EEFTG during the G20 Global Summit on Financing Energy Efficiency, Innovation and Clean Technology and identify areas of consensus and convergence across world regions and types of financial institutions as well as policymakers.

EXPECTED IMPACTS

The programme raised awareness to world energy policy key stakeholders.

PERIOD
2019 - 2020

COUNTRIES
Global (G20)

PARTNERS
UNEP FI

FUNDER
UN Environment

ROLE OF BASE
Proving inputs on the structure of the activity report
CLIMATE FINANCE

MANUAL OF FINANCING MECHANISMS AND BUSINESS MODELS FOR ENERGY EFFICIENCY

Developing a manual that provides an overview of innovative financing mechanisms, and business models from around the world that has spurred new investments in energy efficiency.

DESCRIPTION

BASE has developed a manual that provides an overview of innovative financing mechanisms, and business models from around the world that has spurred new investments in energy efficiency. The manual focuses on technologies covered by the United for Efficiency initiative – air conditioners, lighting, electric motor systems, refrigeration, and distribution transformers. Together these products consume over half of the world’s electricity.

The manual focuses on three energy end-use sectors: residential, commercial, and public, and includes a description of the mechanism, the role of different actors involved, complementary mechanisms, and case studies of successful models.

EXPECTED IMPACTS

The manual has been widely shared and has received positive feedback from various stakeholders including the Green Climate Fund (GCF), national and regional energy agencies or associations.

PERIOD
2018 - 2019

COUNTRIES
Global

PARTNERS
NA

FUNDER
UN Environment

ROLE OF BASE
Lead author and coordinator.

READ THE MANUAL
Communication has increasingly become a priority for BASE’s work.

Through our media engagement, social media and events, we provide a platform to share news of our projects and sustainable energy and climate change solutions around the world.

WEBSITE AND SOCIAL MEDIA

BASE maintains an up-to-date website and corporate social media accounts. These channels provide an opportunity to communicate success, and promote the work that BASE does around the world.

Our social media platforms continued to share daily news, data and stories of success to a combined audience across LinkedIn and Twitter.

In 2019, BASE gained 798 followers on LinkedIn, reaching 1239 corporate LinkedIn followers, and had a total of 35 thousand impressions. On Twitter BASE gained 112 followers, reaching a total of 504, and had a total of 124 thousand impressions.

BASE has also increased its use of videos and other visual products to deliver information about our projects. Our videos can be found on our Youtube channel.

EVENTS AND PUBLICATIONS

In 2019 alone, more than 50 news articles were tracked referencing BASE and/or our projects around the world. Coverage throughout the year appeared in influential publications such as The Economist and Carbon Brief. Moreover, the release of our Manual of Financing Mechanisms and Business Models for Energy Efficiency drew widespread attention getting featured in many of our partner’s websites.

We also used critical moments and events in 2019 to deliver key messages on our projects and the need of investment on sustainable energy and climate change solutions.

> Bloomberg New Energy Finance Summit in New York in March. BASE presented and launched the Cooling as a Service Initiative.


> Global Innovate4Climate event held in Singapore in June. BASE presented on innovative business models for cooling in cities.

> Climate Week in New York in September. BASE presented at various events and was endorsed by the Global Innovation Lab for Climate Finance at their official side event.

> 31st Meeting of the Parties to the Montreal Protocol (MOP 31) in November. BASE presented and launched the Cooling as a Service Alliance at the official side event of Sustainable Energy for All.

> 25th Conference of the Parties to the UNFCCC (COP 25) in Madrid, Spain in December. BASE participated and presented at various high-level side events.
**PARTNERSHIPS**

Partners are essential to our solutions.

Our work would not be possible without the support and collaboration of our excellent partners. Together we deliver effective solutions to each project and address the complex challenges of climate change and sustainable energy.

**TESTIMONIALS**

A few words from our partners...

“In working with BASE on two innovative climate finance projects, the BASE team demonstrated creative thinking and analytical rigor to design solutions that withstood the Lab’s comprehensive development process. Our most recent BASE project, Cooling as a Service, has especially strong catalytic potential given the increasing need for efficient cooling in developing countries.”

- **Barbara Buchner**, Global Managing Director and Executive Director at Climate Policy Initiative

“BASE’s professionalism, local, regional and global knowledge and experience coupled with an in-depth understanding of what works most effectively for sustainable energy finance and strategic market transformation programmes, now and in the future, is instrumental to our UN Environment Programme’s successful delivery.”

- **Paul Kellett**, Programme Manager, United for Efficiency (U4E) Energy and Climate Branch, Economy Division, UN Environment

“WorldGBC is excited to have a partnership with BASE in our Americas region, where we have joined forces to help mainstream the Cooling as a Service (CaaS) business model. Through our collaboration, we are helping to bring innovative solutions for scaling energy efficiency in buildings by rethinking existing models.”

- **Cristina Gamboa**, CEO World Green Business Council

“Through the Cooling as a Service Initiative, BASE and K-CEP have been providing excellent support to create the required tools facilitating the implementation of the model in Latin America, and we are confident that we will disseminate CaaS throughout the region.”

- **Shu Kawasaki**, Vice President Operations at Daikin Latin America

“BASE’s work in Energy Savings Insurance has helped to finance transformative projects from Paraguay to Mongolia, enabling the Green Climate Fund (GCF) to support the creation of conducive markets for climate investments. We look forward to a continued partnership with BASE on innovative approaches to climate finance.”

- **Leo Park**, Financial Institutions Manager and Corporate Sustainability Officer at Green Climate Fund

“The best of working with BASE is the global knowledge of best practices of its team and their flexibility to co-create green finance solutions in different markets, clients and sectors.”

- **Luis Alejandro Mejia Caniz**, Lead Investment Officer at IDB-Invest
BASE is using the insights from its work in 2019, combined with important lessons learned from each of our projects, to further focus our activities in 2020.

- BASE is developing a new website, which integrates a more visual way to show our work. The new website allows for the creation of new connections between publications, projects, media, and staff.

- BASE has planned different webinars for our projects: Cooling as a Service and ESI Europe. These will be recorded and posted on the website to share knowledge.

- BASE is planning to participate and host different events for 2020, including matchmakings and workshops for some of the projects.

BASE is also seeking new projects and the following list provides a summary of the projects currently being planned or pursued by BASE.

- BASE was awarded funding for the European Commission Horizon 2020 programme for an Efficient Equipment as a Service (eEaaS) project and will begin in mid 2020. The project aims to implement BASE’s flagship efficient Equipment as a Service model in three high potential European countries – the Netherlands, Belgium and Spain.

- BASE submitted a proposal for IKI alongside the United Nations Environment and the Inter-American Development Bank on community based adaptation for smallholder agriculturalists in Central and South America through a Weather Index Based Insurance.

- BASE participated in a proposal to the European Commission Horizon 2020 programme to scale up electric mobility in three different European cities: Barcelona, Krakow and Naples.

- BASE is working on a proposal for the International Fund for Agricultural Development (IFAD) alongside Inter-American Institute for Cooperation on Agriculture (IICA) and Practical Action to scale up renewable energy technologies in agriculture in Bolivia, Ecuador and Peru.

- BASE is preparing a proposal under the European Commission Horizon 2020 programme to expand the ESI Europe model to another three European countries that showed the highest potential: Croatia, Greece and Slovakia. This project will explore the use of blockchain technology and smart contracts for energy efficiency.

- In 2020, BASE will continue to look for opportunities to develop new climate finance innovations, and to roll out its flagship initiatives in new markets where they have the potential to have a positive impact, including: remittances for sustainable energy and climate resilience, servitisation business models for sustainable energy and energy savings insurance