

20  
years



BASE

# CELEBRATING 20 YEARS





# INDEX

**FOREWORD**  
Page 4



**INTRODUCTION**  
Page 10

**2001**  
**BASE'S FOUNDING**  
Page 16



**2002**  
**FINANCING SUSTAINABLE ENERGY DIRECTORY**  
Page 18

**2003**  
**BASE PARTICIPATES AT ITS FIRST COP**  
Page 22

**FOUNDING OF THE GOLD STANDARD**  
Page 20



**SEFI - SUSTAINABLE ENERGY FINANCE INITIATIVE**  
Page 24

**INTERNATIONAL CONFERENCE FOR RENEWABLE ENERGIES IN BONN**  
Page 26

**2004**

**2007**  
**TRAINING PROGRAMME ON INSURANCE RISK MANAGEMENT FOR RENEWABLE ENERGY**  
Page 28



**2009**  
**REMITENERGY IN HAITI**  
Page 30



**2010**  
**GREENTEK VENTURES**  
Page 32



**2011**  
**E-MOBILITY IN LATIN AMERICA**  
Page 34



**2015**  
**ENERGY SAVINGS INSURANCE**  
Page 36



**2016**  
**PARTNERSHIP AND WORK WITH UNITED FOR EFFICIENCY**  
Page 38



**2019**  
**MANUAL OF FINANCING MECHANISM AND BUSINESS MODELS FOR ENERGY EFFICIENCY**  
Page 40

**COOLING AS A SERVICE INITIATIVE**  
Page 42



**THE NEXT 20 YEARS OF BASE**  
Page 46





01

# FOREWORD





## The need for action and the role of finance to achieve the SDGs and Paris Accords



Each year, around the time of the Conference of the Parties to the Climate Change Convention, UNEP Releases “The Emissions Gap Report”, a mirror on just how far off track the world is in reaching the goal of the Paris Agreement of limiting global temperature rise to well below 2° Celsius. According to the 2020 edition, emissions continued to grow in 2019, hitting 59.1 gigatons of carbon equivalent. While we can expect a decline in emissions in 2020, the COVID19 pandemic has done little to limit the climate catastrophe.

A faster transition to a cleaner, climate friendly energy system is more than ever needed to stave off the worst impacts of climate change. At the same time, this transition must include the billions of people who still lack access to electricity and the modern forms of energy that are key to provide for basic human needs such as food security, sanitation, health care, and education.

Finance in all its forms is a crucial part of this energy transition. The technologies that can help us meet our climate and development goals already exist, but unless they are affordable, installed and maintained, the benefits of solar panels or wind turbines or efficient appliances are unrealized. And this is where BASE has played an important role. For the past 20 years BASE has developed and put into place new financing mechanisms that show what can be done when creativity meets need. From devising clever ways through which remittances can be directed to finance climate friendly appliances, to creating energy savings insurance products, to reframing the old idea of purchase of cooling products with a service model approach, BASE has been a consistent innovator of sustainable energy and climate finance solutions. From modest beginnings, its influence and impact have grown steadily, to the point where BASE is an important member of the growing group of organisations that are collectively shaping the climate finance landscape. It is clear that we must substantially raise ambition to achieve the SDGs and the Paris Agreement. We are far from where we should be, but there are many good initiatives that provide a solid foundation for scaled-up action in sustainable energy and climate finance and are a cause for hope. And new areas such as climate adaptation finance where needs are growing remain relatively unexplored. For twenty years BASE has been demonstrating how good creative ideas can be put into practice. We look forward to benefiting from its thought-provoking leadership for another 20 years.

*Mark Radka,  
President of the Foundation Board  
Head of UN Environment Programme’s Energy and Climate Branch*

## Bridging the Climate Financing Gap with Innovative Financial Mechanisms



This year marks 20 years since the founding of BASE. In this time, the devastating impacts of climate change have become more widespread and intense, with vulnerable populations contributing the least to the crisis bearing a disproportionate burden of its adverse effects. Along with offering an opportunity to celebrate many successful projects, our anniversary brings with it a reminder of the urgent need to create a world that reconciles the planet, people, and profit.

Since its inception, BASE has been committed to making climate-friendly solutions the norm and not the exception for current and future generations. The UN’s Intergovernmental Panel on Climate Change (IPCC) states that an annual investment of USD 2.4 trillion is needed in the energy system alone until 2035 to limit temperature rise to below 1.5 °C from pre-industrial levels. Today, sustainable and climate-resilient options still often require a higher upfront investment than conventional solutions. Innovative, sustainable and market-based business models are crucial to make these solutions accessible and affordable for all.

Paving the way along these lines, BASE has acted as a change-setter, developing and implementing business models to create a more sustainable world. I am proud of the work BASE has done over the past years by leading and supporting initiatives that tackle issues lying at the very core of the climate crisis. We have both mindfully built on existing knowledge and boldly tested new waters: from using servitisation business models to promote the uptake of efficient equipment; leveraging remittances to set up off-grid systems where centralised grids cannot bridge the gap; expanding the Energy Savings Insurance from Latin America to Europe; and implementing innovative business models like on-bill and on-wage.

Through this report, we offer you a glimpse of some of our trailblazing initiatives over the years, acknowledging with it their impact and the various partners involved in translating ideas into practice. We look forward to continuing to share our work with you and revolutionising the climate finance sphere. The climate crisis is knocking at our doors, and we must answer the call together, now more than ever.

*Daniel Magallón  
Managing Director of BASE*



# STATEMENTS FROM OUR FOUNDATION BOARD



## FOREWORD



“The increasing commitments to net zero emphasize the importance of scalable solutions which can be applied across many regions by many stakeholders. BASE’s continuous success in developing and launching new scalable solutions allows for maximum impact in driving the energy transition.”

***Gina Domanig, Managing Partner at Emerald Technology Ventures.***



“When BASE was funded in 2001, the financing of sustainable energy was a bottleneck. For 20 years BASE has had its share in shaping this conversation. Now, people have understood that financing is the key to saving the climate. However, sustainable energy is still a niche product. Hence BASE is innovating for mainstreaming renewables and efficiency.”

***Daniel Wiener, Co-Founder and President at Global Infrastructure Basel Foundation (GIB).***



“For 20 years BASE has provided a forum for connecting passionate, committed people together to solve the world’s greatest challenge. The focus on sustainable solutions as the norm, not the exception, comes through clearly in what has been accomplished in the last 20 years all over the world. But we must continue to stay-focused and work together to tackle even more issues as climate change stretches communities and resources further.”

***Maxine Ghavi, Senior Vice President, Head of Grid Edge Solutions Business at Hitachi ABB Power Grids.***



“BASE has demonstrated leadership in designing sustainable energy financing schemes in emerging markets. Over 20 years the team has been innovating and projects proven to be scalable. More of the catalytic work of BASE is required going forward for the Paris greenhouse reduction goals to be met.”

***Christina Ulardic, Managing Partner at Astanor Ventures.***



02

# INTRODUCTION





# THE PROBLEM

Despite the climate crisis being regarded as the existential threat of our times, neither the current volume of financial flows nor their direction is enough to stem global warming and build resilience among populations most affected by the changing climatic conditions. Greenhouse gas emissions are on the rise despite government commitments, with an additional USD 2.5 to 4.8 trillion needed yearly to close the current climate finance gap. Investments in climate action are often hamstrung by high upfront costs, uncertain risk profiles, information asymmetry, and difficulty in finding financially viable and bankable projects. Overcoming these barriers and knowledge gaps calls for the creation of innovative finance mechanisms that leverage public and private investments and make the market work for the people and the planet.

# OUR MISSION AND VISION

Established in 2001, BASE is a Swiss not-for-profit foundation and a Specialized Partner of the United Nations Environment Programme. 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. 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 and climate change solutions and focuses on strategies that overcome key market barriers.

# WHAT WE DO



RENEWABLE ENERGY



ENERGY EFFICIENCY



ENERGY ACCESS



ELECTRIC MOBILITY



CLIMATE FINANCE



ADAPTATION & RESILIENCE



LAND USE



CIRCULAR ECONOMY



03

# STORIES FROM OUR 20 YEARS





The concept of BASE began when Klaus Töpfer, former Executive Director of UNEP, attended the first Basel Congress for Sustainable People Energy Future (SUN21) in 1998. At the conference, it was distinctly noticed the institutional deficit in renewable energy and energy efficiency. Back then, the global challenge of sustainable energy financing was a completely fragmented area, with a clear gap between investors and major sustainable energy projects.

Three years later in 2001, BASE was officially founded in Basel as a Collaborating Center of the United Nations Environment Programme and a tri-national project between France, Germany and Switzerland to endorse and support the vision of

UNEP to promote a sound environment. BASE's mandate was to accelerate finance in sustainable energy worldwide and build bridges between sectors and actors at the nexus of sustainable energy solutions, finance and international development.

The city of Basel, as a sustainability and financial hub, was the perfect location to bring this innovative project to life. Not only was Basel centrally located, but the region also offered progressive environmental laws and society. Basel is a key city in terms of finance, research and technical implementation, and there has been the necessary know-how available to support the work of BASE.



MAJOR EVENTS

# 2001 BASE'S FOUNDING

Klaus Töpfer (UNEP) and Barbara Schneider (Canton Basel) sign the founding of BASE.







## PUBLICATIONS

# 2002 FINANCING SUSTAINABLE ENERGY DIRECTORY

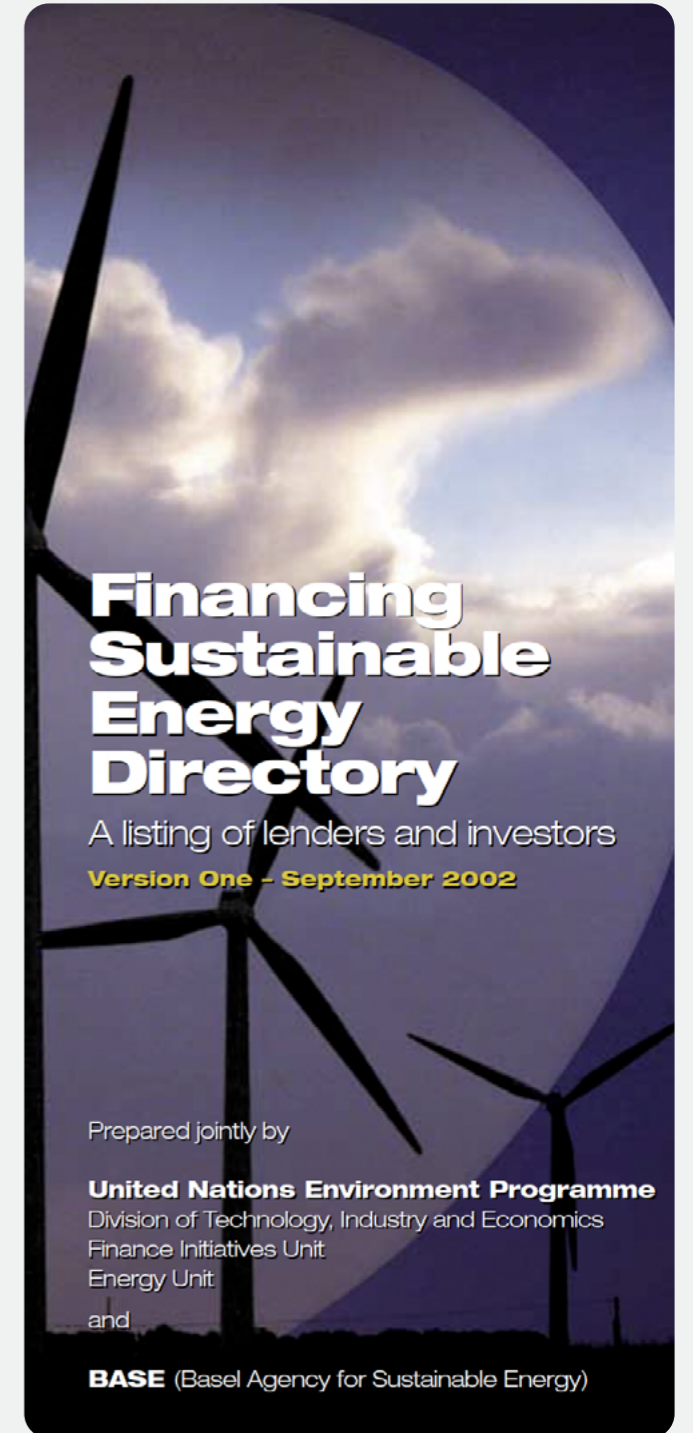
The Financing Sustainable Energy Directory was one of BASE's first projects and it was designed to help interested investors, project developers and entrepreneurs seeking capital, as well as investors looking for financing vehicles to support the industry. The Directory was an online inventory of lenders and investors who provide finance to the renewable energy and energy efficiency sectors.

Back in 2002, renewable energy projects were the fastest-growing segment of the energy sector worldwide. In just two decades, the wind energy industry has evolved from a collection of backyard enthusiasts to a multi-billion dollar industry currently experiencing a 30 percent annual growth rate and an average growth rate of 20 percent over the last ten years. The solar cell market also experienced substantial expansion, increasing by an average of 15 percent annually from 1990 to 2000. In 2001, the industry sold more than 200 megawatts of solar cell modules for a total revenue of more than USD 1.1 billion.

Two complementary forces have bolstered this growth: rapid technical progress and new market regulations promoting cleaner forms of energy. Technical progress from the experience of installing hundreds of devices has led to dramatic declines in the cost of tapping into energy from renewable sources.

While these developments previously attracted only a tiny fraction of the annual investment in new energy projects, the promising track record of the renewable energy sector in meeting goals and fulfilling the impact imperative has piqued the interest of many lenders and investors. With this growth strengthening the momentum of the global energy transition, more investors had the confidence to finance renewable energy technologies.

Download the directory [here](#).







## INITIATIVES

# 2003

# FOUNDING OF THE GOLD STANDARD

The Gold Standard was co-founded by BASE alongside other international NGOs in 2003 to tailor a trusted carbon offset certification standard for the growing voluntary market. Certain sectors, such as aviation, shipping, and road freight, were predicted to take longer in making strides towards a low-carbon future. In these hard-to-abate industries, carbon offsetting serves as a critical tool for businesses to take responsibility for their current carbon footprint now while concurrently formulating their decarbonisation strategies.

The Gold Standard follows a results-based finance approach to ensure projects maintain the highest level of environmental integrity by delivering genuine emission reductions and energy efficiency. Over the past decade, it has contributed to long-term sustainable development by progressively expanding the scope of the projects to include waste management, land use, forests, and water. Currently the Gold Standard seeks to accelerate progress toward the Paris Agreement and Sustainable Development Goals through robust standards and verified impacts.

The efforts of the Gold Standard certification to bring the voluntary carbon markets in complete sync with the goals of the Paris Agreement have been endorsed by more than 80 international NGOs so far and remain open to any NGO that seeks to promote sustainable development, climate action, and energy solutions. The certification has been employed by over 2000 projects across 80 countries for carbon offset verification, creating over USD 25.6 billion in shared value for climate action and sustainable development. Ever since its launch, the Gold Standard has garnered immense credibility, making it the global benchmark for capturing meaningful impact in climate and development initiatives.

BASE hosted its Secretariat until 2005, after which the Gold Standard was converted into a separate entity that is presently headquartered in Geneva, Switzerland.

# Gold Standard<sup>®</sup>





BASE presenting in a panel at COP23.

MAJOR EVENTS

2003  
BASE PARTICIPATES  
AT ITS FIRST COP

The Conference of the Parties (COPs) are yearly conferences held in the framework of the United Nations Framework Convention on Climate Change (UNFCCC) to shape the climate agenda, assess progress in addressing climate change and discuss the implementation of climate agreements.

BASE joined for the first time in 2003, at COP9, which took place in Italy, and has

regularly participated since. BASE's role at COPs has been to push the climate finance agenda, highlighting the importance of innovative financial mechanisms for solving the climate crisis in line with the timeline established by the international community and giving visibility to its business models. BASE successfully achieved this by organising numerous side events and participating as speakers in numerous conferences.



Part of the BASE team at COP26 in Glasgow.





## INITIATIVES

# 2004

# SEFI - SUSTAINABLE ENERGY FINANCE INITIATIVE

The Sustainable Energy Finance Initiative (SEFI) was launched in 2004 as a collaborative effort between BASE and UNEP to channel finance towards energy efficiency at scale and speed, globally. SEFI served as a stepping-stone for fostering a paradigm shift in the financial markets beyond the pace at which it would occur on its own. According to several studies, mainstreaming of sustainable energy investments was not proceeding fast enough to accomplish time-bound international climate targets, even within conducive regulatory environments.

To achieve this vision, the initiative changed the high-risk perceptions associated with sustainable financing by providing targeted information to financiers. Additionally, it equipped investors and project developers with credible tools that incorporated environmental and social factors into risk assessment and economic performance, helping secure long-term financial returns while simultaneously promoting sustainable development goals. SEFI drew attention to underserved yet promising investment opportunities and financing mechanisms by extending access to detailed reports with on-the-ground insights and curating the SEFI directory, a thorough database of lenders and investors for sustainable energy.

Taking inspiration from the UNEP Finance Initiative, SEFI used modest amounts of capital to convene financiers, encouraged them to work synergistically, and catalysed public-private alliances that could share costs and lower barriers to sustainable energy investments. Coalescing diverse actors at different levels of developing energy-aligned programmes allowed them to club expertise

and shield financiers against substantial inefficiencies in global sustainable energy markets, such as poor policy and regulatory consistency across nations. This practice also overcame the lack of efficient intermediation in the sustainable finance marketplace and enabled investors to source deals that responded to their impact needs.

Many financiers were reluctant to enter the relatively uncharted territory of sustainable energy investments individually. Thus, BASE closely supported UNEP in establishing the SEF Alliance, an international coalition of public and publicly backed organisations with experience in sustainable energy, to give new entrants an extra push and reassurance. The Alliance included California Energy Commission, The Carbon Trust (UK), Sitra (Finland), Sustainable Development Technology Canada, Sustainable Energy Ireland, Corporación de Fomento de la Producción (Chile), and Trust Funds for Rural Development (Mexico). Members exchanged best practices, pooled resources, partnered on projects, and assisted other governments with locally adapting new or similar financing models.

The initiative concluded in 2013, after nearly a decade of providing guidance on how to tap into public sector capital and utilise it for unlocking innovation and private investment in the renewable energy and energy efficiency sectors. It laid a strong foundation for developed markets to optimise and emerging economies to strengthen their public finance approaches in these fields.





## MAJOR EVENTS

# 2004 INTERNATIONAL CONFERENCE FOR RENEWABLE ENERGIES IN BONN

During the 2004 International Conference for Renewable Energies in Bonn, BASE as part of SEFI, organised the Sustainable Energy Finance Event called “Creating the Climate for Change”. This two-day meeting brought together 260 members of the finance community, government officials and project developers from 37 countries, becoming a benchmark for future events of this type.

The event recognised the mitigation potential of a global transition to a sustainable energy mix based on renewable energy and energy efficiency, in addition to the potential to address regional and local environmental concerns, reducing poverty, and preventing future resource conflicts. It was concluded that the right policy frameworks and

financial instruments were vital for overcoming the challenges faced in mainstreaming renewable energy and energy efficiency.

Moreover, insightful conversations during the gathering produced two noteworthy recommendations at that time that were submitted to the Conference. These have shaped the focus of BASE’s work today - (1) need for financial innovations to provide entrepreneurs with access to risk capital and to fill the widening gap between traditional debt and equity available in the market, and (2) the need for the long term commitment of government agencies and donors to build the local capacity of SMEs, their specialised service, and capital providers.







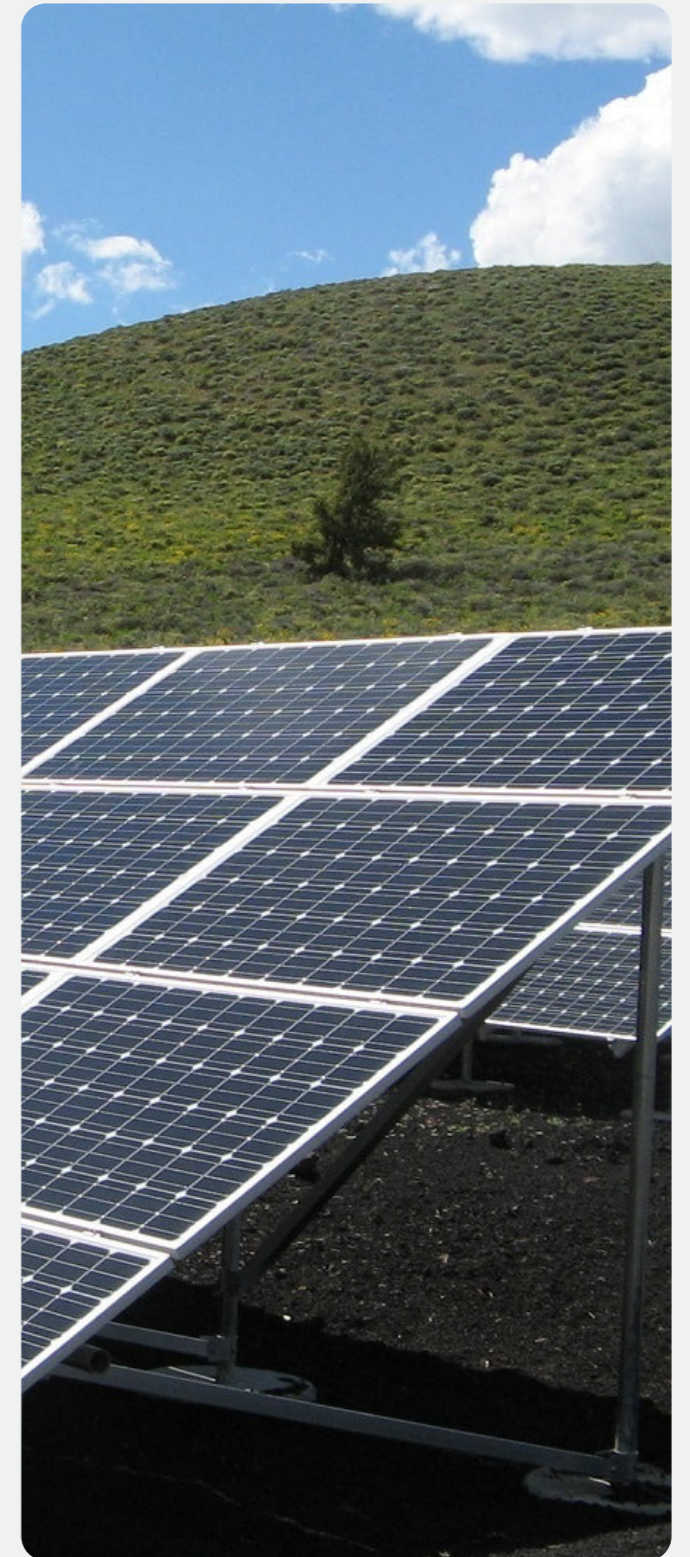
## INITIATIVES

# 2007

# TRAINING PROGRAMME ON INSURANCE RISK MANAGEMENT FOR RENEWABLE ENERGY

To promote renewable energy technologies around the world, UNEP, BASE and CarbonRe, with support from the Global Environment Facility (GEF), developed a free online access training material on risk management for renewable energy projects. The Renewable Energy Insurance Training Kit aimed at enhancing the understanding of insurers, financiers and project sponsors on climate change issues, renewable energy policy frameworks, insurance practices, and risk management tools and approaches that can be designed to advance renewable energy markets.

The training kit is structured for self-educational purposes. It comprises six modules on different aspects of insurance for renewable energy projects, focusing on conditions in developing countries. A list of key terms, lesson review, further readings and useful links, and multiple choice quizzes are provided at the end of each module to facilitate effective knowledge transfer and learning.







## BEST PRACTICE CASE STUDIES

# 2009

## REMITENERGY IN HAITI

## BEST PRACTICE CASE STUDIES

In 2009, Haiti was one of the poorest countries in the world, along with the lowest coverage of electricity in the Western Hemisphere. Only 12.5% of its 8.9 million population had reliable access to electricity. At the same time, over 1 million Haitians lived and worked in the USA, sending about USD 1.8 billion in remittances, which accounted for 20% of the GDP. Tapping into remittance corridors between diaspora workers in developed countries and their families back home can pave a sustainable and empowering way to address energy poverty.

With the support of the Multilateral Investment Fund of the Inter-American Development Bank (IDB), and the Clinton Bush Haiti Fund, and in partnership with Arc Finance, BASE explored the potential of remittances to spur energy access. BASE developed a business model that enabled migrant workers from Haiti, living in Miami, USA, to allocate part of their remittance payments towards sustainable energy solutions for their communities and families in their home countries.

The business model enables migrant workers to actively purchase energy products at a remittance agent affiliated with Food Express, a Haitian-owned remittance company with an extensive network. The products are sent directly to the receiver via the vast network of SogeXpress, a widely used Haitian money transfer organisation with 56 stores across the country, which obtains the products at a wholesale price from a local distributing partner. Other critical considerations, including consumer satisfaction and market sustainability, are taken care of by the distributor in the form of warranty fulfilment.

After conducting thorough national market assessment and feasibility studies, the business model was introduced in Haiti in April 2012. By the end of the two-year project implementation period, over 5,000 lanterns with mobile charging and mini solar home systems had been sold. The project is self-sustaining on the local market and as a result, by 2016 82,000 clean energy products were sold, benefitting 410,000 families. The project enabled a 30% cut-back on energy costs for the beneficiaries, with nearly 0.165 megawatts of clean energy installed and 7,000 tons of greenhouse gas emissions reduced.

RemitEnergy also opened new employment opportunities in the target areas, with SogeXpress hiring 136 staff members and 601 consignment agents. The staff was upskilled on operating solar products through 11 training modules, 59% of those trained were women. Moreover, 6 million people were reached in Haiti through awareness-raising campaigns.

The pilot successfully presented remittances as a viable means to finance clean energy. Since 2009, BASE has also implemented a similar model in Bolivia with migrant workers living in Spain for the acquisition of solar water boilers and conducted feasibility studies in Central Asia. More recently, in 2021 BASE has been awarded a feasibility study grant with Oxfam in the Pacific, for the development of a remittance-based financing vehicle that aims to advance climate action and sustainable resilient infrastructure development in the Pacific Islands.





## INITIATIVES

# 2010 GREENTEK VENTURES

In many developing countries, there is a lack of funding sources that can assess, absorb, and mitigate the risk presented by the application of green technologies in the country context.

Without equipping the financial ecosystems with financing options and instruments specialised in green technologies, capable of taking on a certain level of risk, many projects that have the potential to combine profitability with ethical behaviour, social justice, and environmental care do not reach the implementation stage. To further exacerbate matters, the limited access to suitable resources and the latest technologies increases economic inequality across developing countries.

The greenTEK Ventures global fund was launched in 2010 by BASE to develop a holistic approach for creating private equity funds specialised in green technology. Its objective was to build these local funds and empower a team of local specialists to manage these funds. The funds were focused on supporting the uptake of commercially viable technology solutions that foster economic development in ways consistent with advancing environmental and social well-being. The project also aimed to facilitate access to debt for local projects by leveraging private equity funds.

The initiative sought to build capacity among investors and demonstrate that economic and environmental performance can go hand in hand in these countries. The private equity funds specialised in the deployment of green technologies have the potential to generate substantial financial returns, mitigate climate change, support job creation, reduce poverty, and help these economies in their energy transition.

BASE built a USD 100 million green private equity fund in Mexico and undertook efforts to launch a USD 100 million fund for South Africa and Turkey. greenTEK ventures focused on assisting with the financial, tax, and legal structuring of the funds,

and the development of the Private Placement Memorandum. Furthermore, the endeavour helped build and aggregate local funds, generate the initial pipeline of projects, and facilitate cross-sector partnerships, including public-private partnerships.

Projects evaluated included geothermal, energy efficiency, co-generation, solar photovoltaic and solar water heaters, and water and waste management for industrial purposes. greenTEK Ventures also supported the projects accelerating technology transfer from Europe and the US to developing countries, focusing on strengthening investment proposals and evaluating existing technologies.







## BEST PRACTICE CASE STUDIES

# 2011 E-MOBILITY IN LATIN AMERICA

High rates of urban development in Latin America over the 20th century have acted as a double-edged sword for its people and the environment. Many socioeconomic benefits have been accompanied by enormous challenges, one such concern being the rapid expansion of the region's transportation sector. Although there is little that the governments can do to cap the surge in private ownership of fossil-fuel-based vehicles, there has been a strong interest in wholly electrifying public buses as a part of the region's efforts to transition to cleaner mobility.

To tackle this challenge, in 2013 BASE joined the Inter-American Development Bank and Bancolombia, a Colombian development bank, in structuring a USD 20 million financial product that would cater to Colombia's plans to adopt the use of low-emission buses. Together, they created a financial mechanism to facilitate the uptake of 270 hybrid buses. Since battery prices make up the lion's share of the upfront costs for electrifying mass mobility, Volvo, in consultation with BASE's experts, implemented battery as a service. By introducing this 'product as a service' model to secure performance and trouble-free operation, the team brought down the capital costs associated with the electric bus adoption by up to 30%, pulling forward the country's timetable for moving from diesel to hybrid buses.

To expand on the benefits of the as-a-service model, BASE supported TransMilenio – the Bus Rapid Transit (BRT) network that forms the backbone of Bogota's public transportation system – with designing a framework and financial instrument in 2019 to facilitate a shift to e-mobility services. Given the high initial expenses of purchasing electric buses, bus operators required new means to acquire sufficient financing to shift to clean mobility. In the case of diesel buses, banks and manufacturers readily offer financing by accepting the purchased bus as collateral. BASE and its partners crafted a novel cost structure under the bus as a service model to

disentangle capital and operational risks. The fees collected from users and other sources of funding allocated to the system pay for the fleet's provision and its independent operation. At the same time, TransMilenio enters a futures contract with the electric bus providers, backed by the city's income, to cover costs when passenger demand fluctuates. Thereby, the primary capital risk is transferred to the state. As a layer of safety, a well-structured stability fund was established to guarantee the transport system income with relatively little risk to the concessionaires. These measures unlocked other financial products, like securitisation, that played a critical part in helping Bogota gain access to nearly 1,500 electric buses.

BASE has supported similar initiatives in Peru, Argentina, and Costa Rica for technical, financial, and operational analysis and modelling. This has resulted in better remuneration structures for bus operators to adopt e-mobility, deconcentration of risk arising from demand fluctuations between bus operators and local governments, lower energy tariffs on electric buses, and longer concession contracts for electric vehicles. It has further helped identify transport companies capable of investing in pilot projects in different contexts to gather information on and improve e-mobility operations and infrastructure.

Our experience designing baselines to enable the widespread electrification of public transportation in Latin American countries shows that there is no one-size-fits-all strategy. Every market has its unique challenges that need to be addressed independently. Working with local governments in designing guarantee mechanisms backed by alternate sources of finances lies at the core of disincentivising the use of private vehicles and fossil fuels without reducing current and compromised public inflows.





## BEST PRACTICE CASE STUDIES

# 2015 ENERGY SAVINGS INSURANCE

Energy use constitutes a substantial proportion of production costs for many enterprises, particularly in energy-intensive sectors that rely on heating or cooling for their processes or the provision of their services, presenting a significant market opportunity for increasing end-use efficiency and improving the integration of renewables in the energy system.

Thus, the Energy Savings Insurance (ESI) model was designed to facilitate investments by enterprises into efficient technologies. In 2013, BASE conceptualised and implemented the ESI model in collaboration with the Inter-American Development Bank (IDB). Since its inception, it has evolved into a tried and tested market-based solution to leverage resources from multilateral development or governmental agencies, helping spur demand for and stimulate private investments in energy efficiency. The ESI model, thanks to its holistic approach to tackling the investment barriers and underperformance risk facing energy efficiency, was selected as one of the most promising instruments for mobilising private sector finance by the Global Innovation Lab for Climate Finance in 2015.

Under the ESI model, financial and non-financial elements work in conjunction with each other to mitigate project risk, and create trust and credibility among key market actors in energy efficiency. The ESI consists of four core ingredients: a) a standardised contract that is a transparent framework for negotiations and distributes the risk across relevant actors; b) an energy savings insurance that is a risk coverage product by a third party; c) a validation process lead by an independent validation entity to check the project's capacity to deliver the savings, attenuating the technical risk of energy efficiency projects ; and d) a financing structure that contains competitive credit conditions, favourable loan tenors, and support in accessing collateral encouraging enterprises to invest in energy-efficient solutions. Currently, the ESI model is being implemented in

several countries adapted to the local context. The IDB with the support of BASE and other partners is developing and operationalising the ESI model in Argentina, El Salvador, Chile, Brazil, Nicaragua, Paraguay, and Peru. In the pioneer countries of Colombia and Mexico, ESI has already helped enterprises in the healthcare and hospitality sector rein in energy consumption by up to 70% and reduce the environmental impact of their economic activities. Over 80 projects with a diversified focus on solar photovoltaics, cooling, solar thermal, air conditioning, and other energy-efficient technologies have been rolled out in the region, drawing investments to the tune of USD 18.4 million.

Meanwhile, in Europe, BASE's ESI model is being implemented with funding from the European Commission's Horizon 2020 Research and Innovation Programme in Italy, Portugal and Spain. A new brand identity, GoSafe with ESI, was set up to consolidate standardised contracts adapted to the legal context of each country, validation processes by a Europe-wide validation entity, local insurance companies, and financial institutions under one umbrella. As a way to further build trust, the ESI Europe implementation incorporates blockchain-based management information systems, guaranteeing traceability and reliability of energy efficiency projects. The project also involves dissemination efforts to promote the model more broadly across Europe, the development of long-lasting training tools such as the "ESI Europe toolkit" to enable the roll-out of the model in other interested countries and sectors.

In 2021, BASE is expanding the ESI Europe project and the GoSafe with ESI solution to Croatia, Greece and Slovakia with additional funding from the Horizon 2020 programme.





ECOFRIDGES kick-off meeting in Ghana

## INITIATIVES

# 2016

# PARTNERSHIP AND WORK WITH UNITED FOR EFFICIENCY

Energy efficiency presents enormous investment and saving opportunities for businesses and households, with significant promise to reduce greenhouse gas emissions. Even as the environmental advantage of energy-efficient technologies becomes increasingly evident, their uptake remains hamstrung by asymmetric market information and financial constraints.

To address this, in 2016 BASE joined forces with United for Efficiency (U4E), an UN Environment initiative aiming to accelerate the transition towards clean and efficient appliances, and have worked together on several energy efficiency projects since. The two organisations complemented each other's expertise, wherein U4E developed standards and policy recommendations regarding energy-efficient appliances, while BASE designed and implemented financial models to realise the policy objectives.

Together with the Lawrence Berkeley National Laboratory, BASE and U4E launched The Caribbean Cooling Initiative (C-COOL) in 2016 to accelerate the adoption of energy-efficient and climate-friendly air conditioners and refrigerators in Jamaica, Dominican Republic, Barbados, The Bahamas, and Saint Lucia. This endeavour resulted in the creation of National Cooling Strategies, including policy recommendations such as for Minimum Energy Performance Standards (MEPS) and labelling, and the development of a region-specific Cooling as a Service (CaaS) financial model. These measures laid the foundation for suppliers and consumers of air conditioning and refrigeration products to transition to the latest technology without requiring any upfront investment.

In Rwanda, the R-COOL initiative was introduced to support the government's ongoing efforts to develop a safe, efficient, and economical energy sector through the formulation of MEPS and labelling policies with an innovative financial mechanism. BASE worked with the Rwanda Green fund (FONERWA) and the Business Development Fund of Rwanda (BDF) to design "Coolease", a

financial and risk mitigation mechanism that could allow SMEs to access more efficient cooling units via leasing, enabled by a payment guarantee to cover part of the loss in case of default.

To further broaden the efforts of R-COOL, the Rwanda Cooling Finance Initiative (R-COOLFI) was set up by BASE and its partners, with the Rwandan Environment Management Authority (REMA) serving as the leading executive entity of R-COOL green on-wage in Rwanda. The development and implementation of the green on-wage financing can potentially help overcome 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. Once implemented, the model would enable salaried customers to acquire eligible equipment on special credit conditions and pay for it over time through deductions on their salaries.

In West Africa, BASE joined U4E and the ECOFRIDGES consortium to conduct an extensive market assessment and help design two financial mechanisms: Green On-wage financing in Ghana and On-bill financing in Senegal. Both credit lines were successfully made open to the public at the end of 2020. In Ghana, ECOFRIDGES Green on-wage financing offers unsecured personal loans to employees of professional entities that already have or had a business relationship with the bank to acquire certified equipment and pay for it over time. In Senegal, ECOFRIDGES on-bill financing allows consumers to finance the purchase through monthly payments on their electric utility bills.

Experience through these different cases indicates that a wide array of innovative tools that increase awareness about specific energy-saving opportunities, set equipment standards, mandate audits and assessments, enable access to capital, and create financial incentives, need to be deployed in combination with each other to maximise the capture of energy efficiency potential.





## PUBLICATIONS

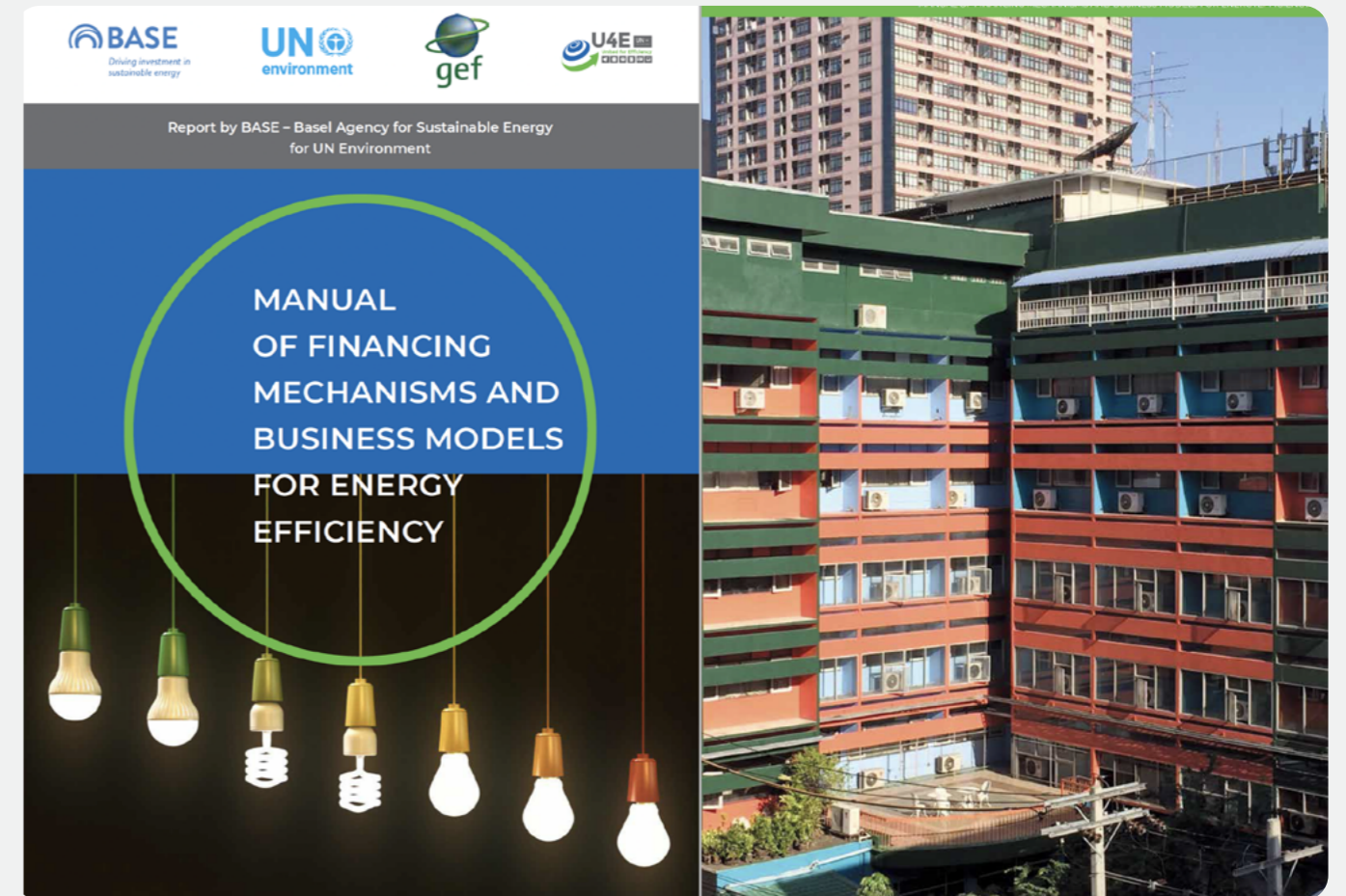
# 2019 MANUAL OF FINANCING MECHANISMS AND BUSINESS MODELS FOR ENERGY EFFICIENCY

To share knowledge and support the uptake of energy efficiency projects, in 2019 BASE put together a manual on financing mechanisms and business models for energy efficiency with support from the United for Efficiency from UNEP.

The manual aimed at providing an overview of innovative financing mechanisms and business models from around the world that have spurred new investments in energy efficiency. Furthermore, it draws attention to technologies covered by the United for Efficiency initiative – air conditioners, lighting, electric motor systems, refrigeration, and power distribution transformers. Together these products consume over half of the world's electricity.

There are many barriers inhibiting investments in energy efficiency currently, including high upfront costs, lack of access to finance, high perceived risk, lack of trust in new technologies, competing investment priorities, lack of knowledge and awareness, and split incentives. Many of these barriers can be overcome, at least in significant part, with well-designed financing mechanisms, incentives and business models, together with complementary measures such as policies, regulations, awareness-raising activities and behavioural change initiatives.

Download the manual [here](#).







## BEST PRACTICE CASE STUDIES

# 2019 COOLING AS A SERVICE INITIATIVE

As temperatures soar worldwide, vulnerable populations living in areas at the risk of facing the direct consequences of a warming planet continue to battle high energy costs and unmet demand for air conditioning and refrigeration. Deprived of viable alternatives, people are forced to rely on old, energy-draining equipment that uses ozone-harming refrigerants. Today, cooling technologies currently consume 10% of the world's electricity – set to triple by 2050.

The Cooling as a Service (CaaS) Initiative, rolled out by BASE with funding from the Clean Cooling Collaborative (formerly K-CEP), addresses these challenges and tackles market barriers by streamlining and scaling up the use of the pay-per-use model CaaS, wherein ownership of the asset is replaced with customers paying a fee for every metered unit of cooling consumed. The technology provider assumes ownership of the cooling system, bearing all costs of supplying, maintaining and operating it, including the utilities. Technology providers favour long-term benefits over short-term cost-cutting strategies to secure economic benefits from their participation in the arrangement. Therefore, they are encouraged to provide equipment that maximises operating efficiency and reduces expensive, unplanned breakdowns by conducting periodic maintenance, also extending asset's lives. Furthermore, servitisation promotes the re-utilisation of the equipment and its components through modular designs that give technology providers the flexibility to upgrade the appliances in line with the consumers' evolving needs. This makes the model a key element to the circular economy.

In 2019, the Global Innovation Lab for Climate Finance endorsed the model as one of the most innovative, actionable, and scalable financial instruments of the year. Over the years, BASE has helped bring several CaaS pilots to fruition in different contexts and regions.

In its effort to promote efficient cooling, BASE

adopted a four-pronged approach, which included developing a comprehensive toolkit, launching an incubator, conducting match-making events and awareness raising activities including case studies, and setting up a multi-stakeholder alliance to allow for the mainstreaming of CaaS. To build a strong foundational understanding of the model and its components, a publicly available toolkit was put together comprising standardised CaaS contracts, pricing models, and explanatory documentation including recommendations of financial structures to monetise projects. Since the dissemination of the CaaS toolkit, it has been downloaded by nearly 250 organisations.

Following the knowledge creation, BASE helped five selected enterprises translate theory in practice by providing them technical, legal, and financial assistance to integrate CaaS into their business operations. Additionally, it supported technology providers and investment funds with piloting projects in diverse sectors (commercial, industrial, agricultural, health) in Latin America, Africa, and Asia. Finally, the CaaS Alliance consolidated these efforts under one umbrella by creating a collaborative environment where more than 65 global manufacturers, technology providers, investors, and international organisations could leverage each other's learnings and resources to accelerate the market adoption of sustainable cooling solutions.

ColdHubs, the winner of the CaaS Prize







MAJOR EVENTS

Caas Matchmaking event in South Africa

# 2020 CAAS E-SUMMIT AND MATCHMAKING EVENTS

To mainstream the concept and accelerate the adoption of servitisation in the cooling industry, BASE hosted in-person and virtual match-making events. The largest of these was the Global Cooling as a Service E-Summit hosted by BASE on 1 December, uniting the Cooling as a Service community from around the world.

The E-Summit generated strong interest from key players in the private sector, including financiers, solution providers, business leaders, building owners/operators, and more. By sharing the experiences and expertise throughout the value chain, the event showed how genuinely revolutionary the CaaS business model has been throughout the world and its potential to scale up sustainable Cooling and contribute to a net-zero

built environment. The event attracted more than 1,200 registrations from 82 countries and brought together 50 speakers, offering a comprehensive dive into the servitisation landscape through more than 16 hours of content.

The Global CaaS E-Summit event highlighted the benefits of servitisation as a way to bring energy-efficient cooling systems to the market while reducing waste in the industries taking part and generating value for the stakeholders involved. The E-Summit also enabled the audience to hear straight from the source what different CaaS makes in the day-to-day life of end users currently benefiting from the model, from a real estate developer operating a CaaS project in India to a small-scale pay-per-user user in Nigeria.



04

# THE NEXT 20 YEARS OF BASE





In order to address the targets set out in the Global Sustainable Development Goals and the Paris Accords to the United Nations Framework Convention on Climate Change, continued efforts and new innovations will be needed in order to scale investment in sustainable energy and climate change solutions.

In 2021, BASE formally broadened its mandate from sustainable energy to include all climate change solutions. This reflects the growing global need to scale up financing for adaptation, and the rising importance of climate change mitigation in other areas including land use, agriculture and circular economy. By expanding our scope of work, we hope to bring what we have learnt about innovative financing for sustainable energy, to address the all-encompassing threats of climate change.

# IN 2021, BASE BROADENED ITS MANDATE TO BRING FINANCIAL INNOVATION TO ALL CLIMATE CHANGE SOLUTIONS.





20  
years



*Driving investment in  
climate solutions*

[www.energy-base.org/](http://www.energy-base.org/)