CONTENTS

01
ABOUT REEEP
Introductions
04

02
REEEP IN THE WORLD
10

03
HOW REEEP WORKS – INVEST-LEARN-SHARE
Invest
Learn
Share
12

04
THE PRIVATE FINANCING ADVISORY NETWORK (PFAN)
New Hosting Structure with UNIDO and REEEP
What is Next?
24

05
REEEP IN 2017 – PROJECTS AND INTERVENTIONS
Power Africa: Beyond the Grid
30
Funded for Zambia
32
Powering Agrifood Value Chains
40
REEEP’s 10th Call Investment Portfolio
41
Selected project outcomes
44
MEL Methodologies
45
Practical Applications of Project Learning
Market-Based Deployment of Clean Energy Solutions in South African Urban Waterworks
SWITCH Africa Green
50
The Climate Knowledge Brokers Group
51
Climate Tagger
53

06
REEEP IN FIGURES
Governance
54
Acronyms and References
57
ABOUT REEEP

The Renewable Energy and Energy Efficiency Partnership invests in clean energy markets in low and middle-income countries to reduce CO\textsubscript{2} emissions and build prosperity.

Leveraging a strategic portfolio of high impact projects, REEEP generates, adapts and shares knowledge to build sustainable markets for innovative clean energy and energy efficiency solutions; advance energy access; combat climate change and reduce damage to the environment; improve lives and facilitate economic growth where it matters most.

REEEP invests in Small and Medium-sized Enterprises (SMEs) in low and middle-income countries and develops tailor-made financing mechanisms to make clean energy and energy efficiency technology accessible and affordable to all. In this way, REEEP facilitates a community-led low-carbon energy transition.

One of REEEP’s greatest strengths lies in the combination of extensive on-the-ground experience with a high-level global network. REEEP has the ability to leverage partnerships with governments and international organisations to implement focused interventions directly where they have the largest potential impact: in communities.

Market transformation is complex and multidimensional. We monitor, evaluate and learn from our portfolio to better understand the systems we work in, identify opportunities and barriers to success and lower risk for market actors. The knowledge we gain is shared with government and private sector stakeholders, influencing policy and investment decisions. This knowledge also informs the continuous adaptation of our methodologies to build scale within and enable replication of our projects across markets.

Since 2016, REEEP is executing partner of the Private Financing Advisory Network (PFAN), a multilateral network and partnership which mentors promising and innovative clean energy and energy efficiency projects, coaching them to reach investment-readiness. We believe consolidating the know-how and networks of REEEP and PFAN will allow us to reach more SMEs, scale innovative solutions faster and work more effectively towards a low-carbon energy transition that benefits all.
DONORS

Government of Austria
Government of Ireland
Government of Norway
Government of Sweden
Government of the United Kingdom
European Commission
Climate and Development Knowledge Network (CDKN)
Food and Agriculture Organization of the United Nations (FAO)
OPEC Fund for International Development (OFID)
The Rockefeller Foundation
The Blue Moon Fund
United Nations Industrial Development Organization (UNIDO)

GOVERNING BOARD

Henry Derwent
Climate Strategies - Chair and Treasurer
Alfred Ofosu-Ahenkorah
Energy Commission, Ghana - Deputy Chair
Elfriede More
Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria - Rapporteur
Jörn Rauhut
Federal Ministry of Economic Affairs and Energy, Germany - Deputy Treasurer
Amal-Lee Amin
Inter-American Development Bank
Leila Myriam Basset
Ministry of Foreign Affairs, Norway - until 30 November 2016
Mark Fogarty
First Energy Asia
Ari Huhtala
Climate and Development Knowledge Network (CDKN)
Philippe Scholtès
United Nations Industrial Development Organization (UNIDO) - since 2 December 2016

ADVISORY BOARD

James Cameron
Oversea Development Institute - Chair
Harish Hande
SELCO
Aled Jones
Global Sustainability Institute, Anglia Ruskin University
Kevin Nassiep
South African National Energy Development Institute (SANEDI)
Leslie Parmer
Renewable Energy and International Law Project
Paul Parvatanen
Savills plc - Deputy Director & Chief Executive of Emerge Alliance
Sven Teske
University of Technology Sydney
Richenda Van Leeuwen
Global LPG Partnership

Henry Derwent
Climate Strategies - Chair and Treasurer
Alfred Ofosu-Ahenkorah
Energy Commission, Ghana - Deputy Chair
Elfriede More
Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria - Rapporteur
Jörn Rauhut
Federal Ministry of Economic Affairs and Energy, Germany - Deputy Treasurer
Amal-Lee Amin
Inter-American Development Bank
Leila Myriam Basset
Ministry of Foreign Affairs, Norway - until 30 November 2016
Mark Fogarty
First Energy Asia
Ari Huhtala
Climate and Development Knowledge Network (CDKN)
Philippe Scholtès
United Nations Industrial Development Organization (UNIDO) - since 2 December 2016

James Cameron
Oversea Development Institute - Chair
Harish Hande
SELCO
Aled Jones
Global Sustainability Institute, Anglia Ruskin University
Kevin Nassiep
South African National Energy Development Institute (SANEDI)
Leslie Parmer
Renewable Energy and International Law Project
Paul Parvatanen
Savills plc - Deputy Director & Chief Executive of Emerge Alliance
Sven Teske
University of Technology Sydney
Richenda Van Leeuwen
Global LPG Partnership
INTRODUCTION

On Wednesday the 10th of May, 2017, we relaunched the Private Financing Advisory Network (PFAN) during a global Investment Forum held together with our partner UNIDO, in the context of the Vienna Energy Forum. The new PFAN is hosted jointly by the two organisations.

PFAN has been a surprising success - the network of 150 private investment advisors and investors identifies and coaches promising clean energy businesses in lower and middle-income countries, with the aim to guide them to investment readiness. Since its founding in 2006, it has leveraged over $1.2 billion in investment for projects ranging from biogas electricity plants in South Africa to solar PV companies in India and biodigesters in Cambodia. The new PFAN set-up, with hosting by UNIDO and REEEP and the continued involvement of the former host, the Japanese organisation ICETT, is meant to provide the programme with the means to scale up and reach its full potential. Combining the convening power and fundraising capacities of UNIDO with the agility and market experience of REEEP, we aim to ramp up operations by a factor of 2 to 5 by 2020. That $1.2 billion was only the beginning.

What makes PFAN truly unique and exciting is not this grand total of investment raised - it is that this total consists of a multitude of deals that normally are too small to attract mainstream finance. A scaled-up PFAN means more innovative entrepreneurs will get the opportunity to start or grow their businesses, more investors will be able to become involved in sustainable ventures, more CO₂ emissions will be avoided and more people will gain access to modern, clean energy. And a scaled up PFAN means more cooperation with others, as no single platform or organisation can make the energy transition happen on its own.

REEEP has always worked towards multiple development goals, combining climate action, energy access and poverty reduction. Despite - and because of - REEEP's focus on energy, we see the flip side of poverty reduction - creating prosperity - not merely as a co-benefit of climate change mitigation measures. Instead, REEEP’s approach demonstrates that one intervention can have multiple positive impacts, each strengthening rather than weakening the others. Similarly, the learning generated during REEEP projects is not a by-product but a central part of our work, highly valued because it allows us and others to make well-reasoned decisions for expanding clean energy and energy access markets, and to implement them effectively.

The Sustainable Development Goals (SDGs), adopted in 2015, expressly acknowledge these links between development, environment and climate change, thereby representing a shift towards a more holistic approach to development challenges. The (Intended) Nationally Determined Contributions (NDCs) submitted by 189 countries under the UNFCCC Paris Agreement indicate a way to mainstream climate action beyond environment and climate ministries. A successful conference held in Berlin recently by the Climate and Development Knowledge Network and others showed very clearly that NDC implementation can have pulling power to draw together ministries such as industry, trade, planning, energy and, importantly - finance. While not many NDCs mention the SDGs explicitly their goals are mutually inclusive.

REEEP’s approach demonstrates that one intervention can have multiple positive impacts, each strengthening rather than weakening the others.

“REEEP’s approach demonstrates that one intervention can have multiple positive impacts, each strengthening rather than weakening the others.”
REEEP has 15 years of experience working at the intersection of energy access, climate change mitigation and poverty reduction. There has never been a more important time to leverage this experience and enable large-scale change: a low-carbon energy transition that brings prosperity for all.

After the adoption of the 2030 Agenda for Sustainable Development in late 2015, the year 2016 saw another important milestone in the global combat against climate change: the entry into force of the Paris Agreement. The 147 countries which ratified the agreement by May 2017 have committed to limiting global warming to “well below” 2 degrees Celsius.

Honouring the commitments made under the Paris Agreement while also reaching the targets of the Sustainable Development Goals (SDGs) will not be easy. Both the Paris Agreement and the 2030 Agenda have tight deadlines and require the implementation of rapid, far-reaching, large-scale changes worldwide. Besides, some targets at first sight seem incompatible. Can we provide “Affordable, reliable, sustainable and modern energy for all” (SDG 7) while rapidly reducing CO₂ emissions at the same time? Can emerging economies and low-income countries make the transition to renewable energy while increasing their efforts to end poverty?

REEEP acknowledges the need for innovation, both technological and in terms of financing, because mitigation for the sake of mitigation only is not an option: unless clean energy solutions offer tangible benefits, such as lower prices, reduced pollution and greater reliability than traditional energy, they will not be adopted.

REEEP’s approach to expanding clean energy access and reducing poverty involves working closely with Small and Medium-sized Enterprises (SMEs). The need for private sector involvement in the transition to clean energy is widely recognised. In low and middle-income countries, typically around 90 percent of businesses are SMEs, and they provide 4 out of every 5 new jobs.

The market for clean energy products and services is growing rapidly. The solutions already exist – but do they meet the demand? However, the SMEs developing clean energy and energy efficiency solutions face myriad challenges, especially in the early stages of operation. REEEP works with these companies to help them bridge the gap between proof of concept and production line, to complement their innovative technologies with solid business plans and to unlock financing options that are currently out of reach. The goal is to set in motion an energy transition led by SMEs, which will result in economic growth in the areas where it is most needed and in empowered communities with a sense of ownership of their own energy generation.

The 2030 Agenda and the Paris Agreement both require fast action. Learning from failures and above all quickly scaling up and replicating successes is crucial. Effective Monitoring, Evaluation and Learning (MEL) methods are necessary to be able to tell success from failure, and to account for external effects across different climate change and sustainable development targets. REEEP has developed innovative MEL mechanisms that make such monitoring possible.

In addition, REEEP is a nimble organisation that can quickly adjust its methodologies and effectively apply lessons learned.

Both the climate change and the sustainable development imperative demand action across the board, and have encouraged the involvement of many stakeholders who did not previously consider the two to fall within their realm of responsibility. Effective cooperation among this array of stakeholders is essential if the targets of the 2030 Agenda and the Paris Agreement are to be met. REEEP has years of experience in leveraging partnerships with governments, large and small businesses and international organisations alike.
HOW REEEP WORKS

INVEST-LEARN-SHARE

REEEP’s strength lies in intervening in the early stages of clean energy market development, seeding and de-risking clean energy and energy efficiency markets in low and middle-income countries, and paving the way for commercial investment and sustainable market growth.
REEEP seeks out and targets markets with the greatest potential for contributing to broader “green growth” – growth that is environmentally, socially and economically sustainable - and markets that do not yet function commercially, so-called Frontier Markets. Specifically, we look for sectors that can combat the causes and/or effects of climate change while contributing to increased prosperity and human well-being, especially by expanding access to modern energy.

REEEP pursues this strategy across three stages: Invest-Learn-Share. In some projects, REEEP maintains a lead role across all three stages; in others, REEEP focuses on a specific area, collaborating with other lead partners. The three stages are distinct but interconnected – they could not be implemented in isolation. Investing in SMEs providing clean energy solutions for deployment in frontier markets is at the core of REEEP’s mission. The investment and support offered by REEEP are aimed to prepare the businesses and the markets they operate in for commercial investment.

As an organisation working at very early stages of market development, REEEP’s investment strategy is targeted not at generating financial returns, but at generating information. REEEP utilises this information – about policy and regulatory frameworks, enabling infrastructure, demand trends, and other aspects of the market – to inform evidence-based decisions and design efficient public-private financing approaches that can scale and replicate successful models. This learning is one of REEEP’s greatest strengths and assets. The knowledge generated through REEEP’s MEL processes is only useful if it can be turned into action, by us and others. We share this knowledge with partners and other stakeholders, including businesses, investors and policy makers. REEEP also strives to improve the way in which climate change-related information is shared globally: through our work with the Climate Knowledge Brokers Group (see p.51) and the creation of tools such as Climate Tagger (p.53), we aim to make climate change-related information more readily accessible and more immediately useful to decision makers worldwide.

WHERE REEEP WORKS

REEEP concentrates its activities in four focal regions, where it develops projects that further focus activities following the Invest-Learn-Share framework. REEEP is currently active in a core group of high potential countries in the following regions:

In 2017, our focus remains on clean energy in agrifood value chains and beyond-the-grid electrification. Besides exploring new technologies and applications through pilot investments, we will also be working in a number of specific areas, including the scaling up of the Private Financing Advisory Network (see p.24) and market-based clean energy and energy efficiency solutions for municipal waterworks (see p.48). Investments in beyond-grid electrification will focus on solutions ranging from upgradable solar home systems to decentralized micro grids (see p.32).

East Africa (Kenya, Tanzania, Uganda)
Southern Africa (South Africa, Zambia)
Southeast Asia (Cambodia)
South Asia (India, Bangladesh, Nepal)

THE SMALL AND MEDIUM-SIZED FRONTIER

The crucial role Micro, Small and Medium-sized Enterprises (MSMEs) play in low-income country economies is widely acknowledged. They typically generate around two-thirds of GDP and provide up to 85% of all employment. Where MSMEs thrive, they lead to diversified economies and contribute to long-term inclusive and sustainable development.

The agricultural sector in particular is dominated by MSMEs. The challenges facing these businesses are many and varied, yet the most daunting are the dual challenges of energy and finance: lack of access to energy is the single greatest obstacle to MSME success in Sub-Saharan Africa and South Asia, and lack of access to finance in the top three obstacles across the Global South.

Expanding off-grid electrification

Worldwide, 1.2 billion people lack access to electricity. REEEP works to expand electricity access using clean off-grid technologies. Energy access functions as a catalyst for change and is an important factor for success in eradicating poverty under the 2030 Agenda for Sustainable Development.

Advancing MSME productive energy use in agriculture

A large proportion of SMEs in low and middle-income countries operate in the agricultural sector. REEEP enables productive use of energy by these SMEs to facilitate improved integration in agricultural supply chains, improve livelihoods and increase community resilience to climate change.

Designing public-private financing approaches

If the low-carbon energy transition is to be rolled out quickly enough to reach the goals of the 2030 Agenda and the targets set in the Paris Agreement, large volumes of finance will be needed. This financing cannot be raised solely through the traditional pathways. REEEP leverages partnerships with governments and the private sector to unlock new sources of financing.

Optimising climate knowledge value chains

Decision makers everywhere need reliable, relevant climate change information to make sound decisions for a climate-resilient future. REEEP works to improve the flow of climate knowledge along value chains so that this information becomes accessible to all, in a timely manner and in a format that is useful.
INVEST

REEEP invests in clean energy markets, targeting Small and Medium-sized Enterprises (SMEs) as drivers of innovation and change in high-impact value chains.

Efficient and sustainable value chains are essential for creating the green growth the world needs in order to build prosperity, lift poverty and climate change and reduce environmental damage.

We look for early stage ventures employing proven technologies and business cases, while bringing new and disruptive innovations that address local market needs. SMEs are selected for investment based on a highly competitive application and vetting procedure. Once chosen, an SME receives much more than investment alone: it works with PFAN, an investment accelerator hosted by UNIDO and REEEP (see p.24), to develop a business plan, is assigned a PFAN business coach and has access to PFAN’s investor matchmaking activities. Throughout its work, REEEP uses Results-Based Finance methods to verify project progress.

Small businesses seeking to disrupt the value chains they operate in face myriad obstacles, chief among them a financial services sector which is not adapted to their needs. SMEs are often able to raise early-stage funding to generate a business model and prototype a technology only to stumble a year or two later at one of the many roadblocks to scale.

The International Finance Corporation has termed this phase of business and technology development, along with the associated funding needs, the “missing middle”.

REEEP financial support to SMEs is typically between EUR 100K-1M, and is accompanied by a host of technical support services including best practice advisory derived from the REEEP Portfolio. Business mentoring and investor outreach and matchmaking services can be provided through a number of partners, such as PFAN (see p.24) or RECP.

THE MISSING MIDDLE

REEEP and PFAN combine seed-level donor financing with incubator-like support mechanisms to scale-up and replicate promising business models. We bridge the gap to private finance through de-risking, matchmaking and introduction into higher-level pipelines for growth stage investment.

Insight gained from extensive monitoring and evaluation can inform policies to shape commercial and carbon financing ecosystems and enable crucial access to working capital for more mature enterprises and markets.

Early grant funding and targeted concessional vehicles can support R&D and early-stage start-ups that can develop into an investment pipeline.
REVOLVING LOAN FUNDS

Though non-repayable grant financing of the type issued by REEEP continues to have a critical function in developing and de-risking early-stage markets for clean energy technologies, REEEP has also recognised an emergent need among early-stage SMEs for tailored financing options such as patient debt to finance working capital.

Patient (or concessional or soft) financing broadly refers to comparatively high-risk, low-return financing issued at below-market rates, although the specifics can vary widely depending on the specifics of the investment.

REEEP and partners have developed two regional funds, called revolving capital pools (or RCPs), from which to issue debt financing to SMEs in a number of agrifood value chains on concessional terms: An East African RCP set up with initial capitalization from the OPEC Fund for International Development (OFID) and supported by the Government of Austria, and a Southeast Asian RCP set up with Nexus in Cambodia and with initial capitalization from the Government of Austria and the Blue Moon Fund (see also p.43). The flexibility of the RCPs allows them to issue new loans as they are replenished by repayments. The RCPs also offer a low-transaction cost, high-impact investment opportunity for sovereign and other impact-driven investment partners looking to support market-based green growth in these regions.
How REEEP Works

Because REEEP is a pathfinder organisation, our investments are risky by default; we usually operate in countries and markets with imperfect and/or unreliable data and knowledge about the challenges SMEs face and the ecosystems they operate in.

The uncertainty resulting from these unknowns is mitigated to a certain extent through our focused regional approach, which has led us to develop extensive expertise and on-the-ground networks in our main regions of operation. However, successfully operating in quintessentially dynamic systems requires continuous learning. Monitoring, evaluation and learning are central aspects of all our projects.

REEEP utilises a mixed methodology approach to monitoring, evaluation and learning designed to tackle the complexity of the situations our investments face on the ground and the multiplicity of stakeholders involved, as well as manage the various types and volumes of information flowing in and out of the project environment.

For each project REEEP starts as part of a market acceleration programme; we develop a strategic plan incorporating a stakeholder analysis; key activities, outputs and outcomes; benchmarking and key performance indicators (KPIs); and contingency planning, among other elements. The learning which results from REEEP’s monitoring and evaluation processes is shared with relevant co-investors and policy-makers, to enable evidence-based decision making in both the public and the private sectors. This learning is not merely a by-product of our projects; its generation forms an integral part of our mission.

REEEP’s Theory of Change is a forward-looking hypothesis: if targeted investments are made into specific subsectors of a marketplace for clean energy (at SME-level); if those investments are closely monitored and evaluated; and if the insights gained through this evaluation are appropriately applied in: 1) the investment strategy, 2) the investment strategies of larger co-investors, and 3) a policy-learning and delivery mechanism; those targeted investments can have disproportionate impacts on trajectories of two macro trends: CO₂ emissions and multidimensional prosperity (or sustainable development).

REEEP monitors impacts both in terms of CO₂ emission mitigation and sustainable development. In order to be able to assess the latter, we launched the IMPAQ (Indicators for Multidimensional Prosperity Assessment, Quantification and Testing) programme. IMPAQ has explored and developed quantitative metrics to assess, verify and analyse the sustainable development impact of investment at project level (ex-post) and create scenario projections of impact at market level (ex-ante). The methodology designed by IMPAQ measures both wealth and health, and combines both to provide a more holistic view of prosperity than traditional, purely economic assessment methods.

“Learning is not merely a by-product of our projects; it forms an integral part of our mission.”
HOW REEEP WORKS

The evidence and knowledge we develop through our projects is only valuable if we and others can turn it into action. We follow a multi-tiered approach to sharing knowledge, beginning with direct collaboration with close partners who can put evidence to good use by developing policy and shaping investment pipelines.

The market intelligence which results from REEEP’s MEL processes is directed into three information flows: one internal feedback loop which feeds into the review of the Theory of Change and the project strategy, and two external work streams which process commercial intelligence and policy intelligence, respectively.

Commercial Intelligence
This is the full range of business and investment-related data and insights gained through REEEP’s work. It is processed in collaboration with PFAN, and distilled into actionable commercial best practices for SMEs. REEEP also generates investment intelligence, which serves as a critical de-risking mechanism for specific downstream investors and the investment climate in general.

Policy Intelligence
This is the data and information generated on the ecosystem conditions of specific markets: the legal, regulatory and political environments in which those markets are situated and which can influence their functioning. This data is processed to derive actionable policy learning and recommendations, which can be utilised by the specific requirements of each policy making process. REEEP recognises that information can only lead to action if it is easily accessible, adapted to user needs and presented in a format that is usable. Large volumes of climate change-related information are published every day, at great cost to those who produce it. Millions of people require this information to inform their decision making for a climate-resilient future.

Unfortunately, demand and supply tend to be poorly matched; information and knowledge products often are underutilised, duplicate existing material or are simply misaligned with users’ needs. The system of knowledge resources itself is overpopulated and fragmented, leaving users with bewildering arrays of alternative sources, many of which are incomplete or even conflicting. In low and middle-income countries, decision-makers generally face a lack of data that is relevant to their local environmental and socio-political conditions.

In order to tackle these challenges, REEEP strives to streamline and strengthen knowledge value chains, to improve the flow of relevant knowledge from producers, via brokers to decision-makers around the world.

A large part of this work has been carried out through REEEP’s leading role in the Climate Knowledge Brokers Group, a Community of Practice of more than 400 climate knowledge professionals working to improve the availability and use of knowledge for decision-making (see p.51). REEEP has also developed technical tools to facilitate more effective knowledge management, such as the Climate Tagger (see p.53).

Below left: In many countries, community radio plays an important role in sharing climate change information with the public.
The Private Financing Advisory Network (PFAN) matches innovative low-carbon, climate-resilient projects in low and middle-income countries with private investors, thereby addressing barriers to financing experienced by renewable energy entrepreneurs as well as the lack of investment-ready projects seen by investors. These two challenges have been identified as primary obstacles to the large-scale deployment of low carbon, climate-resilient technologies required to curb climate change. In addition to the need for strong enabling policy and regulatory frameworks, the investment flows necessary to achieve a clean energy transition in time to meet global climate and energy challenges can only be leveraged with the involvement of the private sector.

PFAN screens business plans for economic viability, environmental benefits, and investment readiness. The ventures with the highest potential for success receive intensive coaching to improve their business plans and polish their pitches to investors. As the projects mature and become investor-ready, they are introduced to appropriate investors and/or pitch their plans to investors and financiers at an Investment Forum.

PFAN operates and delivers its services through a network of both highly specialised consultants and advisors and investors of all appetites, including impact investors, private equity funds, venture capitalists, angel investors, development financing institutions and banks, and commercial banks. As a result of this diversity, PFAN is able to cater to a wide range of project and investment types.

Most of PFAN’s consultant network members are based in the countries of PFAN operation and have a deep understanding of the local context. This creates proximity, increases efficiency and reduces transaction costs. It also facilitates the development of local financing and consultancy ecosystems and market in the countries where PFAN operates, which is a key secondary objective of the Network.

Thus far, PFAN has leveraged over USD 1.2 billion in private investment for clean energy and energy efficiency projects in low and middle-income countries. Technologies applied in those projects vary widely, and include solar, biogas, waste to energy, hydro, wind, biomass, rural electrification, energy efficiency, clean transport and clean energy for agriculture.
NEW HOSTING STRUCTURE WITH UNIDO AND REEEP

Since 2016, PFAN is hosted by UNIDO and REEEP in Vienna, Austria. The close cooperation between the two host organisations is one of the greatest strengths of the new PFAN structure.

UNIDO brings to the table its convening power as a UN organisation, and REEEP contributes its agility and adaptability as an international non-profit, its expertise in working in-country with SMEs in the renewable energy space, and its experience of PFAN processes from earlier joint projects. ICETT, the previous host, remains actively engaged.

Under the new hosting structure, PFAN will also benefit from REEEP’s extensive MEL tools and processes, as well as associated Knowledge Management tools, which will capture the market intelligence generated through PFAN’s work. This market intelligence in turn will benefit all partners in the programme.

PFAN’s overarching objective is to increase investments in climate mitigation and adaptation, and thereby reduce greenhouse gas emissions, enhance climate resilience and expand access to modern and affordable energy in developing countries. PFAN will address market barriers and share market opportunities with investors in order to achieve this goal.

The transition of PFAN to new governance and hosting under UNIDO and REEEP is very promising. We look forward to expanding activities and facilitating access to private sector financing for low carbon, climate resilient technologies in developing countries.

Li Yong
Director General of UNIDO
WHAT IS NEXT?

Under the new institutional arrangement, PFAN plans to scale its impact by a factor of three in the next five years. To achieve this, the programme’s institutional capacity is being increased, existing country and regional networks will be strengthened and new networks will be established in countries where PFAN has not been active thus far. In addition, PFAN will enter into new markets beyond clean energy, for example by supporting businesses working on climate change adaptation. PFAN is also investigating bundling and securitisation strategies to gain access to wholesale capital markets.

THE PFAN CLEAN ENERGY AND CLIMATE INVESTMENT FORUM AND RELAUNCH

On the 10th of May, 2017, PFAN was officially relaunched under its new hosting structure with UNIDO and REEEP. The relaunch followed a global investment forum and business plan competition, where six promising clean energy entrepreneurs pitched their business plans to investors and fielded questions from a jury. ATEC Biodigesters International, a business selling household biodigesters in Cambodia and looking for investment to expand its operations to the wider region, was selected as the winner of the competition.

For more information about the projects in the PFAN pipeline, please visit the website: www.pfan-network.net.

SMEs feel excluded from the climate finance process. In order to achieve the impact we need, this finance must be unlocked by up-scaling and bundling MSMEs into larger portfolios to become attractive partners in the capital markets.

Peter Storey
PFAN Global Coordinator

For every USD 1 of donor funds

PFAN leverages
USD 80 - 100 in private investment in clean energy, energy efficiency and adaptation projects in low and middle-income countries.

1.2bn USD investment raised

Emissions reduction of 2.6m tonnes of CO₂e annually

Left: REEEP DG Martin Hiller and REEEP DG Li Yong at the PFAN relaunch in Vienna.

Below: Mette Møglestue (Norwegian Ministry of Foreign Affairs), Li Yong (UNIDO) and Martin Hiller (REEEP) at the PFAN relaunch in Vienna.
After the groundwork had been laid in 2016, in 2017 REEEP commenced the implementation of a number of important and exciting projects. Besides the relaunch of PFAN under its new hosting structure, 2017 saw work start on a large off-grid renewable energy fund in Zambia (see p.32), a project with municipal waterworks in South Africa (p.48) and many more.
POWER AFRICA: BEYOND THE GRID FUND FOR ZAMBIA

Over the course of 2016/2017 REEEP designed and launched the Power Africa: Beyond the Grid Fund for Zambia (BGFZ) on behalf of the Swedish International Development Agency (Sida) and the Swedish Embassy to Zambia in Lusaka. The Fund will contribute to Zambia’s rural energy access goals through an innovative public partnership approach, which aims to bring electricity to 1 million Zambians by 2021, while supporting the long-term growth of sustainable energy markets in the country.

Below: The power unit of a microgrid installed in Mugurameno village, Zambia. Credit: Standard Microgrid.
Ninety-five percent of rural Zambians (and over 70 percent of all Zambians) have no access to modern energy. With a highly dispersed population (around 20 people per km²), expansion of the national utility grid to rural areas is in the near term neither economically nor technically feasible. At the same time, with over 60 percent of the population living under the poverty line and the value of Zambia’s currency having declined precipitously over the past year, the market for rural energy has struggled to take off, lacking in investment and in capacity of energy service providers able to deliver energy to rural areas.

**THE APPROACH**

The BGFZ is designed to incentivise and de-risk market entry and investment, and rapidly accelerate the scaling up of decentralised renewable energy (DRE) approaches to deliver modern energy “beyond the grid” in the country. The BGFZ utilises an innovative impact procurement approach to provide results-based financing toward the delivery of Energy Service Subscriptions to Zambians in rural and peri-urban areas. The fund offers Energy Service Providers (ESPs) a secure and predictable long-term (four year) working capital investment commitment of up to EUR 5 million each, while ensuring that firms are accountable for energy access commitments, and that value for money to the Swedish Government is enhanced.

REEEP began by setting the parameters for the impacts to be procured – in this case, defined as Energy Service Subscriptions (ESS). An ESS is fundamentally characterised by a customer paying for a product or service delivering electricity into their home, either via a solar home system (SHS) or via connection to a decentralised mini-grid. To reflect the quality of energy service, we used the Sustainable Energy for All Multi-Tier Framework for Measuring Energy Access (see p.33) as a basis for defining procurable “impacts” in a results-based financing scheme. For example, a single 10 watt household system providing two lights and a mobile phone charging point is attributed a lower weight than a mini-grid connection providing power for a refrigerator and pressing iron, in addition to lights and mobile phone charging.
The BGFZ invited ESPs to submit competitive bids to deploy ESS in exchange for tranches of grant financing—effectively a reverse auction. The ESPs were evaluated based on their relative contribution to the total energy access (ESS) scope of the procurement in terms of value for money (number of connections and level of energy access—see table on p.33), as well as on a qualitative assessment of business model quality and sustainability. The evaluation placed specific emphasis on market appropriate approaches to service provision, ability to attract investment and setting up sustainable operations that enable a continued service provision for rural Zambians. To ensure accountability, an appropriate level of risk and efficient use of the funds, results-based disbursements are linked to robust monitoring of ESS sales, as well as to qualitative monitoring of milestones set for business plan rollout and ongoing performance.

In 2016, REEEP launched the first procurement round of the Fund, with a total contract value of around EUR 16 million. The Fund received 36 bids with an average working capital ask of around EUR 3.5 million. The Fund ultimately selected five companies for awards, and in 2017 REEEP began a rigorous due diligence and contracting phase, which will be completed in June 2017. After this, the implementation of the scaling and market establishment activities with the companies will commence.

Collectively, the first round targets are impressive. The five companies hope to deploy some 500,000 ESS and serve over 3 million Zambians over the next four years. Among the selected companies are both local and international businesses, and technologies represented include solar microgrids and solar...
home systems (SHS) utilising pay-as-you-go (PAYG). The co-funding commitments from the energy service providers and third party investors have already passed USD 21 million over four years, and look set to increase further.

The five companies to come out of the BGFZ’s first procurement round have great potential for improving the market environment for off-grid solutions in Zambia and improving rural livelihoods. But they cannot do so in a vacuum: the success of the Fund and rural electrification in the country require broad support and engagement from market stakeholders.

BEYOND GRID ZAMBIA

A critical element of REEEP’s strategy in addressing the Zambian market is the establishment of an inclusive and proactive stakeholder platform, one which shares the long-term goals of the Fund in expanding energy access, improving livelihoods and building sustainable economic growth for the country.

Hence, while the provision of working capital needs answers one of the de-risking elements for the market, the Beyond the Grid Zambia initiative, as a whole, is addressing the needs for market support with a more holistic approach through a strategic and targeted engagement of market stakeholders as well as proactive and responsive channelling and coordination of financial and other resources in market supporting activities.

REEEP is currently engaging with Zambian regulators, relevant government agencies, investors, key private sector actors (e.g. other ESPs, potential asset financiers, mobile money providers etc.) and other donors for coordinating efforts, communicating and understanding specific challenges and opportunities in the market. This enables the channelling of Beyond the Grid funds for Zambia to address key market enabling aspects in a targeted way while avoiding duplication of efforts and engaging other market players in a complementary manner.

The market-supporting activities of the Beyond the Grid Zambia initiative are further supported by REEEP’s hands-on approach which includes concrete advisory support for the energy service providers as well a dynamic monitoring, evaluation & learning (MEL) approach. REEEP’s MEL approach is designed to ensure accountability and create a thorough understanding of risks while focusing on building an understanding of the key market drivers, enablers and opportunities. It also produces market data and information that is relevant for the stakeholders looking to enter or playing a supportive/enabling role in the market.

The BGFZ programme design builds on REEEP and PFAN’s established skills, processes and track records of working with SMEs, sustainable market development and the finance sector in a way that enables an innovative and mutually productive public-private partnership with potential for long term sustainable energy provision for rural Zambians.

Left: Electricity from a solar microgrid lights the primary school of Mugurameno village in Zambia.
Credit: Standard Microgrid.
POWERING AGRIFOOD VALUE CHAINS

Powering Agrifood Value Chains is REEEP’s 2015–2017 investment portfolio, containing nine high potential SMEs active in the water-food-energy nexus in Asia, Eastern Africa and Central America. The goals of this programme were to provide these early-stage businesses with grant funding and coaching to de-risk their business models and prepare them for investment by other investors. The overarching goal of Powering Agrifood Value Chains has been self-sustained growth of the businesses in the portfolio as well as the markets for clean energy solutions in the countries where they are active.

Throughout the programme, REEEP monitored the businesses closely, supporting them to continuously adapt to unforeseen barriers and opportunities in these nascent markets and concentrate efforts where they proved most effective. The organisational learning resulting from this intense MEL process was applied not only to the benefit of the Powering Agrifood Value Chains programme itself, but also in the design and development of many other REEEP initiatives, including the Beyond the Grid Fund for Zambia (see p.24), PFAN (p.24), the South African waterworks project (p.48) and the Clean Energy Solutions for Milk Cooling project (p. 46). The selected project outcomes presented here offer excellent examples of REEEP’s Invest-Learn-Share framework in action.

SELECTED PROJECT OUTCOMES

SOLAR IRRIGATION IN EASTERN AFRICA: FUTUREPUMP AND SUNCULTURE

The Powering Agrifood Value Chains portfolio included two SMEs providing solar irrigation solutions in Kenya and wider Eastern Africa: Futurepump and SunCulture. Agriculture forms the backbone of the Kenyan economy, but less than three percent of Kenya’s arable land is irrigated. This leaves farmers vulnerable to changing rainfall patterns due to climate change. Besides reducing this vulnerability, irrigation allows farmers to grow higher-value crops and introduce an additional harvest in the year, and provides access to water for other farming activities such as livestock management. The higher value crops also provide these farmers with more desirable produce to sell, if they have market access. Futurepump and SunCulture both offer solutions in the form of solar-powered water pumps combined with capacity building and innovative payment schemes. Both Futurepump and SunCulture have grown during their period working with REEEP - the SunCulture team grew from 5 to 45 people over the course of the project - and both have since received sizeable investments under the Powering Agriculture programme by USAID, SIDA and GIZ. In March 2017, both businesses were chosen as finalists for the Ashden International Award in recognition of excellence in the field of green energy. In addition, Winrock International has been working with SunCulture and Futurepump to address the lack of access to finance for consumers, which represents a major barrier to scale.

Being the first to do something brings many challenges, and one of the biggest challenges in SunCulture’s early days was capital. After our friends and family round, REEEP was our first backer and was catalytic - REEEP’s funding not only extended our runway, but it also encouraged other funders who were looking at investing in SunCulture.

REEEP has given our Innovators a competitive edge. Our most successful Innovators have all had the privilege of working with REEEP, and being able to build on that work has greatly simplified our subsequent collaborations.

Katharina Meder
Powerting Agriculture – Hub Manager East-Africa, GIZ

Samir Ibrahim
CEO, SunCulture

THE AGRIFOOD SECTOR

\[
\begin{align*}
70\% & \quad \text{of freshwater use} \\
12\%-30\% & \quad \text{of man-made CO}_2\text{e emissions} \\
30\% & \quad \text{of energy demand} \\
70\% & \quad \text{production increase expected by 2050}
\end{align*}
\]
Solar-Powered Agrifood Processing in Tanzania: Redavia

Redavia pioneered high-output solar systems housed in shipping containers, to be used as standalone solutions in communities which previously had no access to energy, or to replace diesel generators, thereby reducing operating costs and CO2 emissions. These systems, with an output of up to 100 kWp, require no upfront investment by customers and can be used for a variety of productive purposes in frontier markets. REEEP worked with Redavia to grow the market for its systems for post-harvest agrifood processing, to increase prosperity in farming communities and expand rural energy access. After the investment by and close collaboration with REEEP, Redavia secured a further investment of over USD 5 million from InfraCo Africa.

Solar-Powered Dairy Refrigeration in Bangladesh: Enerplus

Enerplus works with the enterprise PRAN Dairy in Bangladesh, providing clean energy solutions for its network of Milk Collection Centres. These hubs offer access to cooling units, which are crucial to safeguard the quality of the milk until it is collected by the dairy company. Distributing excess electricity to surrounding villages, the collection centres also provide modern energy in low-access areas. Despite the sometimes difficult business environment resulting from the political unrest in Bangladesh over the past years, the project has been successful in demonstrating the viability of clean energy solutions for milk cooling. Enerplus developed a sound business plan for clean energy integration in six selected PRAN Dairy Milk Collection Centres, which are representative of the diverse mix of collection systems in remote areas of Bangladesh. Building on this pilot phase, the activities can now be scaled up to integrate clean energy solutions in all PRAN’s Milk Collection Centres (currently 103, with another 97 planned). The expertise REEEP gained during the project is being reapplied in a project with GIZ on renewable energy solutions for milk cooling in India and Kenya.

Clean Energy Revolving Fund (CERF) in Southeast Asia: Nexus

Nexus addresses an important barrier to the uptake of clean energy solutions in the agricultural sectors of low- and middle-income countries: the lack of access to finance for SME-level operators. This barrier is especially difficult to overcome in Cambodia, which has a relatively young financial system consisting mostly of particularly risk-averse banks, and where businesses need to be particularly robust to withstand frequent shocks in the fragile agricultural sector. Nexus has established the Clean Energy Revolving Fund (CERF) which targets different segments of the agrifood sector, offering affordable blended finance. The CERF works as a de-risking mechanism for SMEs, paving the way for larger donors to move in once the viability of the business model has been demonstrated. CERF’s innovation and additionality lie in the fact that it addresses the market gap for unsecured lending to the Cambodian agricultural sector for the deployment of renewable energy. In 2017, the fund is fully operational and supports a healthy pipeline of renewable energy SMEs.
REEEP’s Powering Agrifood Value Chains Portfolio saw the first implementation of the organisation’s Enhanced Monitoring, Evaluation and Learning Framework. The uniqueness of this innovative mixed methodology was confirmed through conversations with experts around the globe. REEEP’s Enhanced MEL Framework combines Theory of Change, Logical Framework Approach, Outcome Mapping (for stakeholder analysis) and Most Significant Change, and customizes these for each project. As a result of the application of the Framework to this portfolio, REEEP has gained a deep understanding of the business models represented and formed close relationships with the businesses themselves. Theory of Change and Logical Framework Approach were employed to strategically plan the portfolio, and all four methods were used during ongoing monitoring and evaluation. This process has provided REEEP with an impact narrative of how its grant funding has grown the businesses, as well as a current picture of the barriers and opportunities in the markets and countries the businesses are operating in. Lessons from the use of these mixed methods have been integrated into the development of the MEL Frameworks for all new REEEP programmes.

PRACTICAL APPLICATIONS OF PROJECT LEARNING

The knowledge generated through REEEP’s MEL methodologies is shared with partners and other stakeholders where appropriate, and is also applied by us in carefully selected consultancy projects, which allow us to operationalise and further develop our learning from our past projects, and which benefit our current and future work. The following pages present three projects which apply learning from our work with the businesses in the Powering Agrifood Value Chains portfolio.

EVIDENCE FOR INFORMED POLICY DEVELOPMENT: FAO AND REEEP

Based on data and analysis drawn from Powering Agrifood Value Chains, REEEP provided detailed and extensive case studies - including the development of financial and comprehensive economic cost benefit analyses of technology investments in agrifood value chains, specifically solar-powered irrigation systems (SPS) for small-scale vegetable farming in Kenya; and Rice Husk Gasification (RHG) for fuel in rice processing in Cambodia. The case studies illustrated clear business cases for investment into SPS for vegetable farmers in Kenya. However, the business case for RHG deployment suffered from high risk exposure to relatively volatile commodity prices (of petrol/diesel fuel and rice, respectively), supply chain disruptions and cash-flow pressures, leading to unpredictable returns and broadly unacceptable levels of investor risk, as payback periods fluctuated wildly between 2-3 and 10-11 years within a 12 month period. Both case studies also demonstrated significant additional ecosystem benefits, including value-chain benefits and environmental/climate benefits, which FAO and REEEP will further investigate with the aim of honing robust argumentation toward policy-makers and impact-linked providers of capital investment.

Right: A visit to a SunCulture customer for the Powering Agriculture project (see p.46).
Credit: Quinn Reifmesser for REEEP.
POWERING AGRICULTURE: REEEP AND SUNCULTURE

As the Powering Agrifood Value Chains programme is wrapped up, REEEP and SunCulture are continuing their successful collaboration with a joint project. The goal of this project is to analyse the market potential for the scale up of solar irrigation solutions in Kenya, as well as expansion into Tanzania, Uganda and Zambia. This analysis will be based on a wide range of existing data and information, and it will allow SunCulture to make informed decisions about the strategic expansion of its business. The data will, in addition, be used by SunCulture to develop “climate information services” for SunCulture customers, sales staff and others, in the form of push data and information about climate and weather trends to inform their agricultural decisions.

This project will contribute to REEEP’s goal of compiling market assessments for clean energy solutions in agrifood value chains with high quality data and information, and at the same time will continue REEEP’s support of SunCulture by assisting in the development of tools to inform the company’s daily decision making. Market readiness assessment data of the type used in this project is generally lacking in developing countries, and developing this allows for the capturing of the true impacts the scaled up activities are having on the lives and livelihoods of smallholder farmers.

Within the overall project scope, REEEP is leveraging a detailed understanding of SunCulture’s business strategy gained through the MEL carried out over the past years, as well as expertise of Open and Linked Data (gained especially through reegle.info and the Climate Tagger) and learnings from the operation of the Climate Knowledge Brokers Group Coordination Hub.

The project was launched in late 2016, and the current stage consists of gathering and assessing different data sources: from sourcing open data provided by UN organizations and the World Bank, to talking to regional authorities about the use of their data in the future. A mission to Kenya in February 2017 unveiled a plethora of actors and stakeholders in the field, with whom further collaborations are being pursued.

CLEAN ENERGY SOLUTIONS FOR MILK COOLING: GIZ AND REEEP

This project leverages lessons learned from REEEP’s work with Enerplus in Bangladesh. It looks at the energy requirements of the different parts of the milk value chain in India and Kenya, with the aim of assessing the potential impact of introducing clean energy cooling solutions at different points in this value chain. Besides assessing the potential for replacing diesel generators or unreliable grid electricity with renewable solutions for milk cooling in collection centres, this project also looks at opportunities for clean energy solutions at the farm and during transport.

The project supports REEEP’s focus on self-sustained growth of markets for clean energy solutions in agrifood value chains, and will contribute to REEEP’s market insights in Kenya to inform options for longer-term engagement in the region. It will also help set priorities for the Kilimo Biashara fund, which itself is an outcome of project in the Powering Agrifood Value Chains portfolio.

In February and May 2017, REEEP staff conducted missions to Kenya and India, respectively, to interview stakeholders in the milk value chain ranging from farmers to large dairies and policy makers. The information gathered during these missions will be analysed to find the highest-impact entry points for clean energy solutions for milk cooling in the value chain.

Early insights from the Kenya suggest that there, cooling milk beginning directly after milking on the farm would have the greatest positive impact. In Uttar Pradesh and Rajasthan in India, meanwhile, it looks as though cost-saving clean energy interventions at the milk chilling centres would benefit farmers most. These and other preliminary conclusions will be tested during several cross-regional knowledge exchange workshops to be held in both Kenya and India later in the year.

As the Powering Agrifood Value Chains programme is wrapped up, REEEP and SunCulture are continuing their successful collaboration with a joint project. The goal of this project is to analyse the market potential for the scale up of solar irrigation solutions in Kenya, as well as expansion into Tanzania, Uganda and Zambia. This analysis will be based on a wide range of existing data and information, and it will allow SunCulture to make informed decisions about the strategic expansion of its business. The data will, in addition, be used by SunCulture to develop “climate information services” for SunCulture customers, sales staff and others, in the form of push data and information about climate and weather trends to inform their agricultural decisions.

This project will contribute to REEEP’s goal of compiling market assessments for clean energy solutions in agrifood value chains with high quality data and information, and at the same time will continue REEEP’s support of SunCulture by assisting in the development of tools to inform the company’s daily decision making. Market readiness assessment data of the type used in this project is generally lacking in developing countries, and developing this allows for the capturing of the true impacts the scaled up activities are having on the lives and livelihoods of smallholder farmers.

Within the overall project scope, REEEP is leveraging a detailed understanding of SunCulture’s business strategy gained through the MEL carried out over the past years, as well as expertise of Open and Linked Data (gained especially through reegle.info and the Climate Tagger) and learnings from the operation of the Climate Knowledge Brokers Group Coordination Hub.

The project was launched in late 2016, and the current stage consists of gathering and assessing different data sources: from sourcing open data provided by UN organizations and the World Bank, to talking to regional authorities about the use of their data in the future. A mission to Kenya in February 2017 unveiled a plethora of actors and stakeholders in the field, with whom further collaborations are being pursued.
PROMOTING MARKET-BASED DEPLOYMENT OF CLEAN ENERGY TECHNOLOGY SOLUTIONS IN MUNICIPAL WATERWORKS: PILOT INITIATIVE IN SOUTH AFRICA

Water and waste water systems form the core infrastructure that underpins the delivery of water and sanitation services in cities. They are also among the largest consumers of electricity - and therefore generate substantial CO2 emissions. As a result of the rapid growth of the urban middle class projected in the developing world, demand for water and wastewater services will continue to rise, with attendant pressure on underlying infrastructure. Since electricity can account for up to 40 percent of total operating costs for water and wastewater facilities, decisive action is required to manage both the environmental and financial impacts of providing water and sanitation as essential services to growing urban populations.

Clean energy technologies and systems can dramatically improve efficiency and reduce and avoid CO2 emissions in urban water and wastewater infrastructure, and do so cost-effectively, with investment payback periods of often only a few years.

This project seeks to catalyse commercial activity to reduce CO2 emissions in municipal water and wastewater infrastructure. It will do so by creating pathways to facilitate the cost effective deployment of clean energy technologies and systems in such infrastructure.

The three-year project is financed by the European Commission, with UNIDO as Implementation Partner and REEEP as Execution Partner.

The project will be piloted initially in South Africa, with a view to creating a solid base for replication across Sub-Saharan Africa. The project has the following main features:

- Design and implementation of demonstration and capacity building activities in a small number of selected South African municipalities.
- Engagement with a broad municipal stakeholder group, including market participants and enablers, to highlight clean energy opportunities.
- Innovative monitoring and evaluation and practice-based policy research to compile lessons learned and present practical solutions for clean energy deployment, including the concrete finance and business models behind them.
- Promotion of replication and scale up opportunities in South Africa and the Sub-Saharan African region.

REEEP is uniquely placed to execute the project thanks to its 15 years of experience in implementing and managing clean energy projects in low and middle-income countries. Working closely with the European Commission, UNIDO and South African stakeholders, REEEP is leading the project execution to help create pathways for scale-up and follow-on finance.

The project is currently in its inception phase. Intensive fieldwork is underway to help shape clean energy interventions that are fit for purpose in host municipalities, have the greatest potential for positive financial and environmental impact and - critically - lead to improved delivery of water and sanitation services to end users.

WHY WORK WITH URBAN WATERWORKS IN SOUTH AFRICA?

- 35% of water is lost before it reaches the consumer.
- 90% of electricity in South Africa is generated by coal-fired power stations.
- Waterworks account for 35% of the total energy use by municipal administrations.

Water abstraction from the Boegoeberg irrigation canal by the Grootsdink water treatment works, South Africa.

Credit: A. Vermeulen for Pegasys.

Above: Solar installation at Groblershoop water treatment works, South Africa.

Credit: A. Vermeulen for Pegasys.
Africa faces persistent development challenges and deep-seated poverty, as well as the risk of increased environmental degradation resulting from new economic activity. If Africa’s economic growth is to be ecologically and socially as well as economically sustainable, it must be driven by an energy transition: a transition which leverages renewable energy and energy efficient innovation, takes advantage of technological and commercial advancements and is powered by dynamic private sector involvement.

Technologies such as efficient solar-powered irrigation systems, small hydro-powered agrifood processing and waste-to-energy systems are already cost-effective in many low-income markets, and businesses have developed new models for raising awareness and building customer bases; for empowering and providing finance to clients with limited resources; and for helping customers access new markets for their own products.

The aim of this project is to support South Africa in its transition to an inclusive green economy, promoting a shift toward Sustainable Consumption and Production (SCP) practices and patterns. The project is funded by the European Union and implemented by the United Nations Environment Programme (UNEP), and involves REEEP and SANEDH laying the groundwork for South African SMEs and eco-entrepreneurs in the agricultural and agricultural waste management sectors as they begin and manage this transition. The project increases awareness, uptake and successful implementation of SCP practices and sustainable energy opportunities in SMEs in agricultural food value chains in South Africa. It interlinks with established initiatives and organises training workshops. The project has also established a stakeholder platform, the Energy Agriculture Platform, which has thus far held two sessions in Johannesburg and Stellenbosch. The platform seeks to provide knowledge sharing, strengthen networks, offer technical assistance and input into policies and regulations, and leverage funding for SMEs via an external funding mechanism. It focuses on technology applications and keeps an inventory of initiatives and projects.

The trainings and discussions with stakeholders demonstrated that the themes around the green economy and sustainable consumption and production are large and complex. It was found that these topics cannot be discussed in isolation, and thus the conversation was widened to include overlapping and related themes such as climate change, environmental management and access to energy in rural areas. Viewing this wider scope as an opportunity, the REEEP-SWITCH project established links with local networks and initiatives to build on and enhance sustainable development work in the area as a whole.

A number of training workshops were held in the Free State, Western Cape and Gauteng to support the development of green agribusinesses and eco-entrepreneurship using SCP practices in agriculture, and to equip them to seize business opportunities. Participants were introduced to the opportunities provided by the application of renewable energy and energy efficiency technologies, and shown how these could lead to savings and more reliable energy access. Follow-up workshops identified local case studies and worked through practical solutions for addressing energy issues in agriculture that also take into account the important links to water and food production. More training workshops will be held throughout South Africa over the rest of the year.

As the warming of the earth accelerates, the window of opportunity to take action and avoid catastrophic climate change is shrinking. Quick, decisive action on climate change has never been so urgently needed. This action should be based on sound understanding of the causes and impacts of climate change, as well as the options available for mitigation and adaptation. Climate knowledge brokers play a critical role in providing decision makers with the information and evidence basis for this understanding, and the Climate Knowledge Brokers (CKB) Group helps them fulfil this role effectively.

The CKB Group was founded in 2011, and since 2014, REEEP has hosted the CKB Coordination Hub at its International Secretariat in Vienna, Austria. In the years since, CKB has grown from a group of mostly European- and American-based climate information professionals focusing mainly on online tools into a highly diverse network of knowledge brokers performing a variety of roles both on- and offline. The group now consists of over 400 climate knowledge brokers in 60 countries, working for over 200 different organisations,
including governments, international organisations, universities, small NGOs and the media. Around 35 percent are based in low- and middle-income countries.

Although they work in a variety of different contexts, these climate knowledge brokers are united by a shared vision of a world in which people make climate-sensitive decisions fully informed by the best available climate knowledge.

In 2016, the CKB Coordination Hub officially launched the Spanish translation of its highly successful Climate Knowledge Brokers Manifesto, which was originally published in English in 2015. Other activities focused on Latin America and the Caribbean included a Climate Tagger webinar in Spanish and the publication of a report on challenges and opportunities for climate knowledge brokers in the region.

REEEP is a founding member of CKB, and has been uniquely well-placed to host the Coordination Hub because of its long-standing commitment to Open Knowledge standards and its wide network of organisations in the climate space which share this commitment.

### HOW TO BECOME A CLIMATE KNOWLEDGE BROKER

‘Climate knowledge broker’ is a relatively new term, and what the role entails in practice depends for a large part on someone’s location, institutional context and other individual circumstances. Despite this fact, over the past years the CKB Group has been able to define a number of widely applicable best practices. A series of videos plus a book were produced to answer two different frequent questions by CKB members: How do I explain quickly what climate knowledge brokering entails, and how do I get better at it? These resources explain the need for and role of climate knowledge brokers and give practical advice on several important aspects of the role, with topics ranging from how to set up successful online knowledge platforms to gender equality considerations for climate knowledge brokers.

**CBK PRINCIPLES**

**01**

People who are trying to address the impact of a changing climate deserve high-quality information to support them in their decision making.

**02**

CKB champions the importance of climate knowledge brokers in ensuring high quality climate relevant information is available and accessible to all who need it.

**03**

We believe that understanding user needs in their multiplicity and specificity is essential for effective climate knowledge brokering.

**04**

We are committed to learn together to improve the effectiveness of climate knowledge brokering.

**05**

We support climate knowledge brokers in choosing appropriate tools and methods to address user needs, including intelligent use of digital technologies.

**06**

We apply collaboration as a standard in our work.

**07**

We promote open knowledge (meaning we have an open mind, are actively seeking to share our knowledge and want to work with other who have the same attitude).
REEEP IN FIGURES

In April 2017, Deloitte conducted the annual audit of REEEP’s financial statements and performed assurance services— including verification of compliance— following the requirements of the Austrian Association Act.

The audit found REEEP’s accounting system to be fully in accordance with generally accepted accounting procedures and an internal control environment.

The Audit determined that:

- No objections to REEEP financial procedures were found.
- REEEP financial statements comply with legal requirements, are consistent in all material respects, and give a true and fair view of its financial position and performance for 2016/2017.
- REEEP funds were used in accordance with its statutes.
- No unusual income or expenses were noted.

REEEP LEGAL STATUS

REEEP is an international multilateral partnership, registered in Austria and recognised under Austrian law as a Quasi-International Organization (QuIO), a category of international organization introduced in 2015 to accommodate international organizations with multi-stakeholder institutional structures similar to those of intergovernmental organizations, but also allowing membership of non-government actors.

REEEP qualifies as an international NGO for official development assistance (ODA) contributions according to the Organization for Economic Co-operation and Development (OECD).

REEEP OUTLAYS 2016/2017

In 2016/2017, REEEP outlays amounted to EUR 2.829 million. Investment Capital and Fund Management amounted to 65% of total outlays. REEEP Operations, IT and Governance represented 17% of total expenditures. REEEP Open Knowledge and Strategic Projects made up 10%, while Monitoring Evaluation and Learning (MEL) and Outreach and Network Management accounted for 4% and 2% of outlays, respectively.

REEEP FUNDING OVERVIEW 2012-2017

Over the five-year period from 2012/2013 to 2016/2017, REEEP received EUR 11.13 million in donations, including EUR 9.03 million for investment capital and fund management, and EUR 2.1 million for Open Knowledge and Strategic Projects.
## OVERVIEW OF ASSETS AND LIABILITIES

This table summarizes REEEP’s consolidated assets and liabilities as of 31 March 2017:

<table>
<thead>
<tr>
<th></th>
<th>MAR 17</th>
<th>MAR 16</th>
<th>MAR 15</th>
<th>MAR 14</th>
<th>MAR 13</th>
<th>MAR 12</th>
<th>MAR 11</th>
<th>MAR 10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FIXED ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intangible assets</td>
<td>20</td>
<td>49</td>
<td>85</td>
<td>115</td>
<td>152</td>
<td>65</td>
<td>25</td>
<td>98</td>
</tr>
<tr>
<td>Tangible assets</td>
<td>5</td>
<td>3</td>
<td>9</td>
<td>18</td>
<td>37</td>
<td>17</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td><strong>CURRENT ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>196</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>33</td>
<td>88</td>
<td>114</td>
<td>8</td>
<td>30</td>
<td>99</td>
<td>91</td>
<td>104</td>
</tr>
<tr>
<td>Cash</td>
<td>4,084</td>
<td>4,875</td>
<td>5,920</td>
<td>9,135</td>
<td>11,998</td>
<td>11,953</td>
<td>12,881</td>
<td>12,546</td>
</tr>
<tr>
<td>PRE-PAID EXPENSES</td>
<td>22</td>
<td>5</td>
<td>9</td>
<td>13</td>
<td>7</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CURRENT LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable</td>
<td>53</td>
<td>12</td>
<td>35</td>
<td>92</td>
<td>181</td>
<td>282</td>
<td>164</td>
<td>49</td>
</tr>
<tr>
<td><strong>LONG-TERM LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provision for Liabilities</td>
<td>57</td>
<td>64</td>
<td>189</td>
<td>299</td>
<td>395</td>
<td>814</td>
<td>1,066</td>
<td>987</td>
</tr>
<tr>
<td>Deferred Income</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td><strong>NET FINANCIAL ASSETS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current assets less pre-paid expenses</td>
<td>4,335</td>
<td>4,968</td>
<td>6,043</td>
<td>9,156</td>
<td>12,035</td>
<td>12,058</td>
<td>12,973</td>
<td>12,650</td>
</tr>
<tr>
<td>Provisions and Liabilities</td>
<td>3,061</td>
<td>3,688</td>
<td>4,751</td>
<td>7,484</td>
<td>9,954</td>
<td>9,828</td>
<td>11,107</td>
<td>10,917</td>
</tr>
<tr>
<td><strong>OVERVIEW OF INCOME AND EXPENSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following table summarizes REEEP's consolidated income and expenses for the years ended 31 March 2017, 2016, 2015, 2014, 2013, 2012 and 2011:

<table>
<thead>
<tr>
<th>Year</th>
<th>2015/16</th>
<th>2014/15</th>
<th>2013/14</th>
<th>2012/13</th>
<th>2011/12</th>
<th>2010/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON-EARMARKED CONTRIBUTIONS</td>
<td>150</td>
<td>507</td>
<td>70</td>
<td>70</td>
<td>72</td>
<td>69</td>
</tr>
<tr>
<td>EARMARKED CONTRIBUTIONS</td>
<td>1,733</td>
<td>1,618</td>
<td>268</td>
<td>1,679</td>
<td>3,805</td>
<td>2,729</td>
</tr>
<tr>
<td>ALLOCATION TO LIABILITIES ON ACC.</td>
<td>638</td>
<td>638</td>
<td>2,330</td>
<td>2,333</td>
<td>-368</td>
<td>1,273</td>
</tr>
<tr>
<td>ALLOCATION TO WORK IN PROGRESS</td>
<td>135</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>OTHER INCOME</td>
<td>39</td>
<td>5</td>
<td>15</td>
<td>27</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>EXPENSES FOR PROJECTS</td>
<td>-1,446</td>
<td>-1,683</td>
<td>-1,694</td>
<td>-3,083</td>
<td>-2,734</td>
<td>-2,267</td>
</tr>
<tr>
<td>EXPENSES FOR REGIONAL SECRETARIES</td>
<td>-2</td>
<td>-7</td>
<td>-217</td>
<td>-288</td>
<td>-340</td>
<td>-377</td>
</tr>
<tr>
<td>COST OF STAFF</td>
<td>-1,046</td>
<td>-903</td>
<td>-851</td>
<td>-763</td>
<td>-720</td>
<td>-707</td>
</tr>
<tr>
<td>DEPRECIATION</td>
<td>-36</td>
<td>-39</td>
<td>-53</td>
<td>-54</td>
<td>-47</td>
<td>-27</td>
</tr>
<tr>
<td>OTHER OPERATION EXPENSES</td>
<td>-244</td>
<td>-215</td>
<td>-308</td>
<td>-381</td>
<td>-450</td>
<td>-368</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-28</td>
<td>-59</td>
<td>-440</td>
<td>-471</td>
<td>-504</td>
<td>-341</td>
</tr>
<tr>
<td>NET INCOME FROM INTEREST</td>
<td>-8</td>
<td>6</td>
<td>27</td>
<td>0</td>
<td>83</td>
<td>162</td>
</tr>
<tr>
<td>OPERATING SURPLUS/LOSS</td>
<td>-23</td>
<td>-51</td>
<td>-413</td>
<td>-448</td>
<td>-371</td>
<td>-464</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-24</td>
<td>-54</td>
<td>-458</td>
<td>-466</td>
<td>-433</td>
<td>-427</td>
</tr>
</tbody>
</table>
### ACRONYMS AND REFERENCES

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BGFZ</td>
<td>Beyond the Grid Fund for Zambia</td>
</tr>
<tr>
<td>CDKN</td>
<td>Climate and Development Knowledge Network</td>
</tr>
<tr>
<td>CERF</td>
<td>Clean Energy Revolving Fund</td>
</tr>
<tr>
<td>CKBB</td>
<td>Climate Knowledge Broker Group</td>
</tr>
<tr>
<td>DRE</td>
<td>Decentralised renewable energy</td>
</tr>
<tr>
<td>ESP</td>
<td>Energy service provider</td>
</tr>
<tr>
<td>ESS</td>
<td>Energy service subscription</td>
</tr>
<tr>
<td>EUR</td>
<td>Euro</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic product</td>
</tr>
<tr>
<td>GIZ</td>
<td>Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH</td>
</tr>
<tr>
<td>ICETT</td>
<td>International Center for Environmental Technology Transfer</td>
</tr>
<tr>
<td>IMPAQT</td>
<td>Indicators for Multidimensional Prosperity Assessment, Quantification and Testing</td>
</tr>
<tr>
<td>KPI</td>
<td>Key performance indicator</td>
</tr>
<tr>
<td>MEL</td>
<td>Monitoring, evaluation and learning</td>
</tr>
<tr>
<td>MSMEs</td>
<td>Micro, Small and Medium-sized Enterprises</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Governmental Organization</td>
</tr>
<tr>
<td>ODA</td>
<td>Official development assistance</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>OFID</td>
<td>OPEC Fund for International Development</td>
</tr>
<tr>
<td>PAYG</td>
<td>Pay-as-you-go</td>
</tr>
<tr>
<td>PFAN</td>
<td>Private Financing Advisory Network</td>
</tr>
<tr>
<td>QIO</td>
<td>Quasi international organization</td>
</tr>
<tr>
<td>SCP</td>
<td>Revolving capital pool</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and development</td>
</tr>
<tr>
<td>RECP</td>
<td>Africa-EU Renewable Energy Cooperation Programme</td>
</tr>
<tr>
<td>REEEP</td>
<td>Renewable Energy and Energy Efficiency Partnership</td>
</tr>
<tr>
<td>RHG</td>
<td>Rice husk gasification</td>
</tr>
<tr>
<td>SANEDI</td>
<td>South African National Energy Development Institute</td>
</tr>
<tr>
<td>SCP</td>
<td>Sustainable consumption and production</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SHS</td>
<td>Solar home system</td>
</tr>
<tr>
<td>Sida</td>
<td>Swedish International Development Agency</td>
</tr>
<tr>
<td>SMEs</td>
<td>Small and Medium-sized Enterprises</td>
</tr>
<tr>
<td>SPIS</td>
<td>Solar powered irrigation system</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNIDO</td>
<td>United Nations Industrial Development Organization</td>
</tr>
<tr>
<td>USD</td>
<td>U.S. Dollar</td>
</tr>
</tbody>
</table>

### REFERENCES


### AUTHORS

Maria van Veldhuizen, John Tkack, Olivia Coldrey, Camilla Floreskow, Bronwyn Grant, Sigmund Kluckner, Maya Leasos, Quin Linfemesser

This document is printed on recycled paper.
© Copyright REEEP 2017

Design by Maze 2017
www.maze.london