

ANNUAL  
REVIEW  
2016



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# CEO'S MESSAGE

In 2016 we celebrated ten years of working with businesses large and small to help them expand access to energy. And we marked our birthday by changing our name; at the start of this year we were GVEP International, now we are Energy 4 Impact.

Why? Because we felt it was time for a name which communicates more clearly our purpose. We work to improve energy access not for its own sake, but for the benefits it brings. We want to improve the quality of life for the poor. We want to expand opportunities to earn a better living. We want to contribute to better health services, education and public services. In other words, it's all about impact.

And, as a team, we are very proud of the impact we have had over the last ten years. We have worked with over 3,000 businesses, and our advice, mentoring and other services have helped them deliver access to over 14 million people, creating over 9,000 jobs in the process.

But we did not celebrate our tenth birthday by only looking backwards. In the course of this year, we have also considerably evolved our portfolio of projects. Some have come to a conclusion, and others have started up. For example, the Kenya Climate Innovation Center, which we helped establish with three other partners, is now an independent entity, with its own venture finance facility. And another, our ground-breaking CARE2 project, generously funded by the Swedish Government, completed its fourth and final year, having helped over 1,100 businesses.

Meanwhile, new projects started this year include: two technical assistance facilities for mini-grids, various productive use initiatives, a new project expanding women's economic opportunities in energy access, the next phase of our work in the humanitarian sector, support for the biogas sector in Senegal, and new work on crowdfunding the working capital needs of solar home systems companies. It has been an exceptionally busy period for our programme teams.

Looking forward, we remain committed to our target of delivering beneficial impact for 20 million people by 2020, even though the developments in our external market environment are not uniformly favourable. On the one hand, we see increasing institutional interest in, and hence increased capital flows into, the off-grid energy sector. On the other hand, we know these flows are concentrated in too few countries, product categories and markets. The very poor are still getting left behind. On a macro-scale, global political factors, soft commodity markets, weakness in global financial markets and slowdowns in trading partners' economies are contributing to economic uncertainty for many sub-Saharan countries.

Despite these challenges, we remain optimistic for three reasons. First, the deplorable, unnecessary injustice that is energy poverty will continue to galvanise donor support for these markets. Second, these markets will be sustained because at the household and community level, better energy access makes economic sense. Finally, we have large confidence in the vision, resilience and effectiveness of the entrepreneurs whom we work with each day.

And it is to these entrepreneurs – as well as our funders, staff, and trustees – that we dedicate the progress we have made over the last ten years.



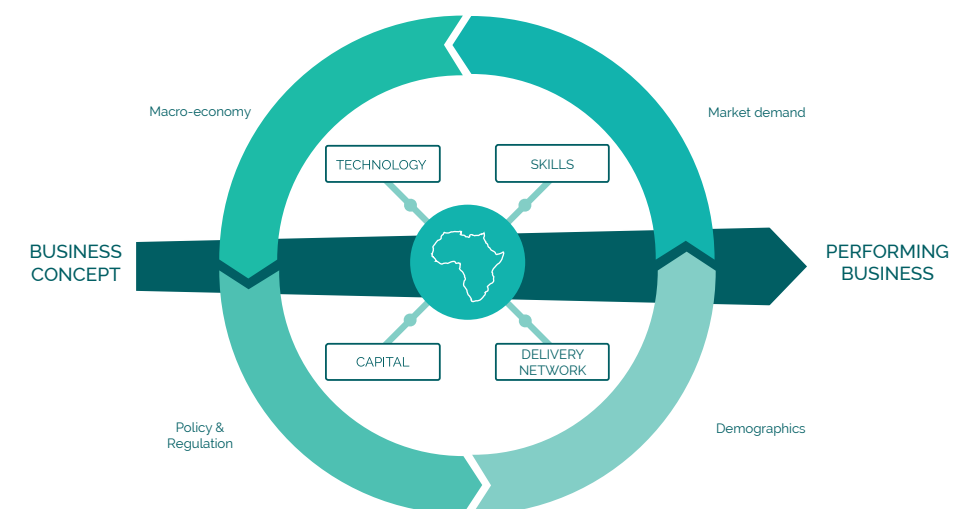
# ABOUT ENERGY4IMPACT

Energy 4 Impact is a non-profit organisation working with businesses that provide energy access to off-grid communities in Africa. Lack of access to energy is one of the most pervasively debilitating aspects of poverty that holds back the continent's development.

We believe that business, not charity, is the best long-term solution to this problem, so we aim to develop the capacity of enterprises to deliver energy access. Through a unique and client-focused approach, our development, financial, technical and advisory support to energy businesses builds both the demand and supply sides of the market.

## Our business model

Our business model is built on the principle that for businesses to become effective agents of socio-economic development, they need resources, such as technology, skills, delivery networks and capital. However, these resources are hard to come by in much of the developing world. We work with stakeholders to develop innovative ways to fill these gaps. Our solutions help businesses grow and become more sustainable and make energy products and services more affordable for consumers – improving the quality of life for millions of people.





“Energy 4 Impact has been an invaluable resource to Sollatek. Their market research, business advice and introductions have helped us make sound business decisions and explore innovative models.”

Natalie Balck, Head of Projects & Partnerships, Sollatek Electronics (Kenya) Ltd

## The case for market-based solutions to closing the energy access gap

An estimated 1.3 billion people around the world do not have access to electricity. Nearly three billion people are without clean cooking facilities; the resulting indoor air pollution kills more people than AIDS, malaria and tuberculosis combined. Most of the world's poor lack both electricity and modern methods of cooking.

One of the UN's Sustainable Development Goals is universal energy access by 2030. This will require significant participation by business and private capital, both to supplement public investment in utility infrastructure, and to accelerate development of off-grid markets, including both household and community-scale systems.

At the moment, however, things are not moving fast enough. The investment requirement hugely exceeds the capacity of public funding sources, and, even in off-grid markets, which are the natural preserve of business, more needs to be done. For example, the International Energy Agency (IEA) forecast that investment into access to modern cooking will reach but \$1 billion per year, but that is 75% short of what is needed.

There is a huge business opportunity here, covering a population of about 700 million alone in sub-Saharan Africa. Energy-poor households are trapped into buying low quality fuel, such as kerosene for lighting and charcoal for cooking – even though it costs more than the cleaner alternatives – because they cannot afford the upfront costs of connecting to the grid or installing solar panels. With help from

consumer finance, households can buy solar home systems or clean cooking technologies, distributed through business models that can recoup capital investments. Significant progress is also being made with mini-grids, which offer community-scale solutions to power supply.

Over the past 10 years, Energy 4 Impact has developed a holistic approach that adds real value, both to the agencies who are funding solutions that address the challenges of renewable energy and sustainability, and to the private sector actors, who can deliver those solutions to under-served communities.

We act as an intermediary between donors and the small businesses they wish to support. We are a front-line, on-the-ground organisation, offering a wide range of enterprise development services that span technology, business and finance, all based on practical, business-oriented experience and with a low overhead structure.

And for our client businesses – the manufacturers of clean cookstoves and biogas digesters, mini-grid project developers and distributors of household solar products, modern cooking technologies, and alternative fuels – we offer tailored solutions that are aligned with market realities and underpinned by a sound understanding of energy access issues.





# 10 YEARS OF IMPACT

This year we have passed important milestones in our mission to accelerate energy access. We are proud to celebrate our achievements, which are also the achievements of the entrepreneurs, partners and donors whose visions and hard work have made this possible.



Provided **14.6 million people** with access to clean, sustainable energy



**3,040** businesses supported



Created **9,350 jobs**



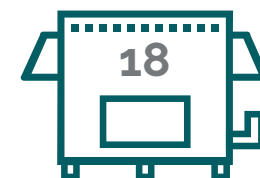
Avoided **12.2 million tonnes** of CO<sub>2</sub>



Raised **\$111 million** to support the development of **over 3,000 businesses**

In the past 10 years, we have helped 2,740 microenterprises and 300 SMEs with business and technical training, mentorship and advice, to help them develop viable, demand-driven businesses that are sustainable and able to scale up.

We have provided enterprise development support to:



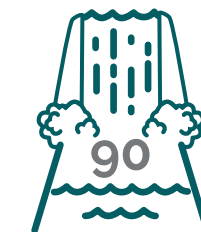
Institutional cookstove makers in Uganda



Businesses engaged in productive use in Senegal



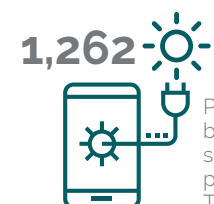
Briquette businesses in Kenya and Uganda



Small and pico-hydro project developers in Rwanda, Kenya and Tanzania



Domestic cookstove makers in Kenya, Senegal, Uganda and Tanzania



Phone-charging businesses and solar-service providers in Rwanda, Tanzania and Kenya



Biogas businesses in Senegal, Kenya, Uganda and Tanzania

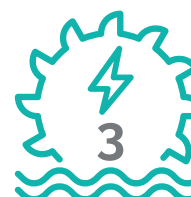


Mini-grid project developers in Kenya, Senegal, Rwanda, Uganda and Tanzania

We have channelled grants from donors to enterprises and supplemented them with technical assistance. Projects include:



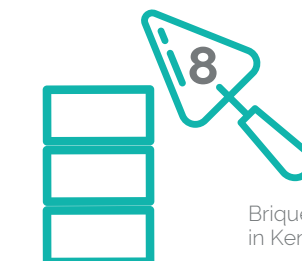
Off-grid lighting SMEs in Rwanda and Kenya



Mini-hydro developers in Rwanda



Stove makers in Kenya



Briquette makers in Kenya



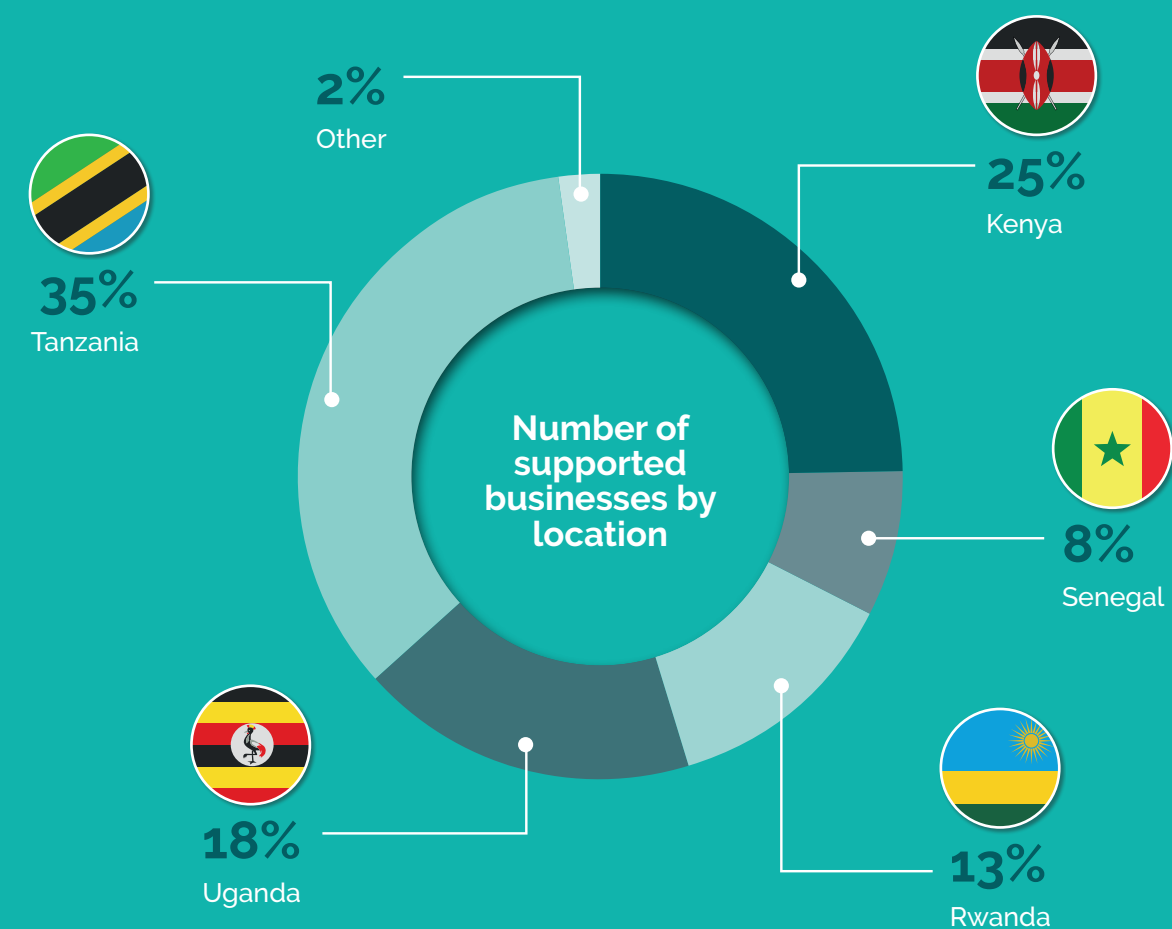
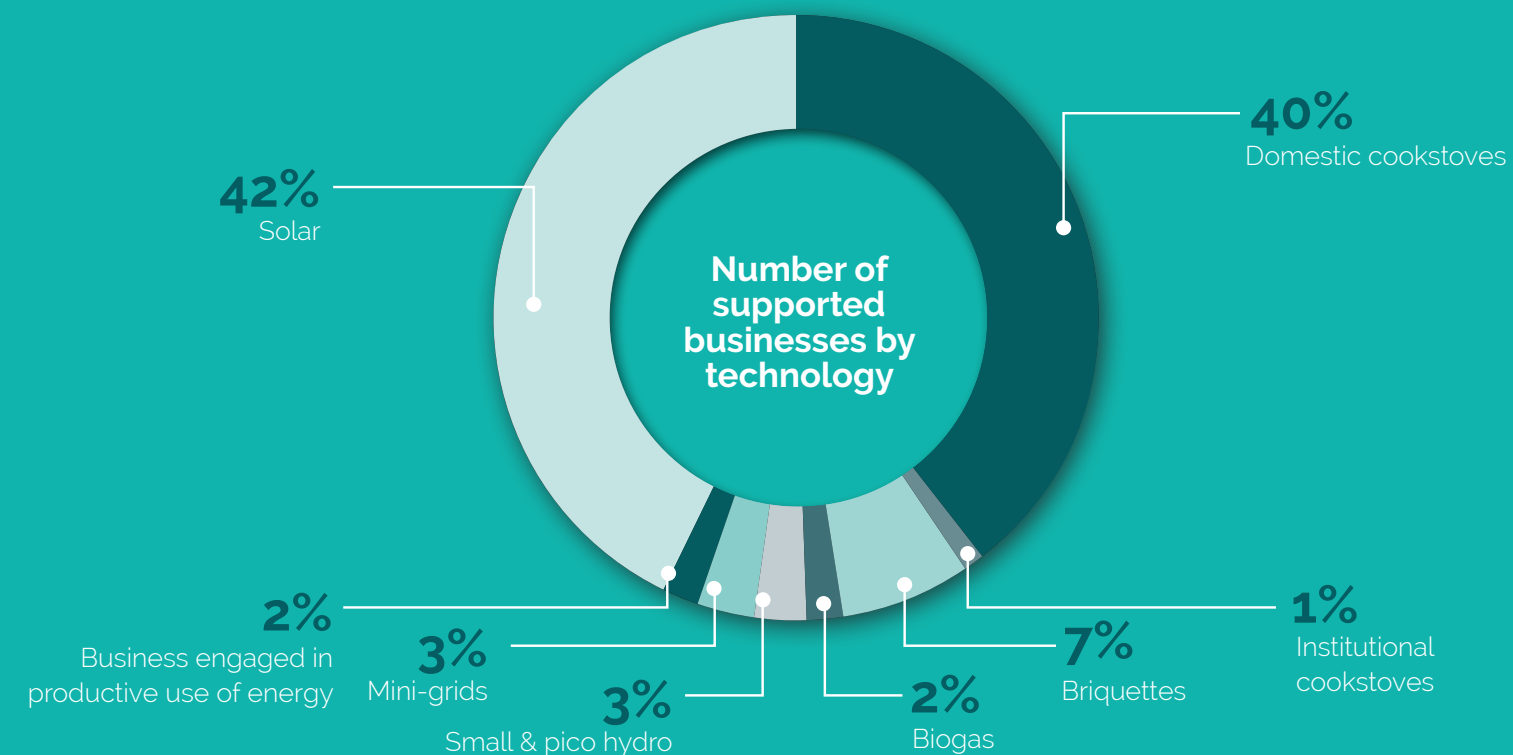
KCIC climate technology start-ups in Kenya

We have helped 427 micro enterprises receive over \$350,000 in microloans. For larger businesses, we have supported 178 small and medium-sized enterprises to access \$94 million in capital – a combination of debt, equity and grants.



"Energy 4 Impact has been very helpful in assisting us to develop our long-term strategy. This has been helpful in both attracting early-stage investors and taking steps towards building a successful company"

Myles Lutheran,  
Managing Director EFK Group





# FROM GVEP TO ENERGY4IMPACT

To mark our 10th anniversary we changed our name from GVEP International to Energy 4 Impact.

Our objective – to increase access to modern energy services and help reduce poverty in developing countries – hasn't changed. But our new name and branding reflects our ambition to deliver energy access for more people in an increasingly impactful way.

Our rebrand has given us the opportunity to reflect on what the word 'impact' means; how we measure it and what it means for the people who are at the receiving end.

While numbers are important as indicators of social and economic growth, they are not the whole story. Access to energy means better family life, better education, higher productivity for farmers and businesses, better healthcare, and better telecommunications and access to information. We also care about the stories of those whose lives are better fulfilled as a result of that impact.

As the energy access sector undergoes rapid change and innovation in technology, in new business models, investment strategies and public policy, we are well positioned to grow and develop with it, thanks to our experience and presence in the countries where some of the trends are starting to take shape. Our work with businesses and our everyday interaction with local markets keep us at the forefront of these innovations.

In the next chapters we look at the way energy creates impact: for farmers and enterprises, for schools and in informal settlements. For each area we give the context, and describe how our work is having an impact. We also look at some of the trends that will dominate the next phase of energy access and that will present opportunities for us to develop our work.

"Energy 4 Impact signifies the great importance we place on the impact that access to energy brings. Our brand says that energy access is not an end in itself; rather that the ultimate goal is to deliver change. We are here to deliver results, benefits and impact."

Ben Good, Energy 4 Impact CEO.

Energy access profoundly affects people's quality of life. Sustainable energy is vital for daily tasks such as cooking, homework, cooling and heating. It also means better access to technology and more opportunities to earn a decent living.



# ENERGY4FARMERS

Around the world, agriculture is the main source of income and employment for poor people who live in rural areas. In Africa, two thirds of the work force is involved in farming, and agriculture accounts for 32% of the continent's gross domestic product.

Energy access is key to better productivity, helping to increase incomes and improve livelihoods. Renewable technologies and hybrid systems can provide the energy needed for land preparation, planting, irrigation, crop harvesting and processing.

Renewable energy can provide cool storage for perishable food products, reducing losses and increasing income. Processed

products also have a higher value than unprocessed ones but in rural areas, tasks such as drying and milling are done by hand – and usually by women. Energy services could reduce the burden of these time-consuming activities.

Farmers can use animal and crop waste as feedstock for a variety of biomass or waste-to-energy technologies, producing anything from biogas for domestic cooking, biomass pellets for industrial boilers or power for community mini-grids.

Energy access also leads to better communications, with mobile phones, radios and televisions helping farmers keep up to date on market and weather information and share their agricultural know-how.

Energy is thus crucial to addressing the challenges of food security and climate resilience.

## Our work in the agriculture and food production sector

### Solar irrigation

We are working with companies in the agricultural sector that use sustainable, clean, cost-effective energy. Some of these companies design and sell solar-powered irrigation systems and agricultural extension services, enabling farmers to save costs, and increase yields of high-value fruit and vegetables.

### Solar agro-processing

Helping local entrepreneurs to develop basic crop processing businesses allows rural economies to grow beyond subsistence farming and the supply of raw materials. This takes not only improved energy access, but access to a range of other enabling resources. We are providing mentoring, business and financial support to a number of micro

and small enterprises run by women in eastern Senegal. These are engaged in processing rice, sorghum, millet, maize, cotton, bananas, baobab fruit and honey.



Germaine Dione and her women's group own a food processing unit in the remote village of Nguène, Senegal. However, due to lack of refrigeration, they could only produce dry foods such as flour, couscous and dried fruits. Since the installation of her solar-powered fridge in June 2016, Germaine has been able to diversify her activities and now sells juice, ice cream, milk and fresh water to her village and surrounding communities.

### Solar refrigeration

Energy 4 Impact has been advising a number of companies that have designed solar refrigeration and

food preservation solutions that can be deployed at the farm level. One such company is Belgium-based Wakati that designs low-cost solar systems for the farmer to preserve post-harvest produce. Energy 4 Impact has helped them develop their market entry strategy for East Africa by analysing various agri-value chains.

## Future trends and opportunities

Agriculture is a key sector in Rwanda, and dependence on rains and a lack of appropriate irrigation systems are major barriers to productivity and food security. Over the next three years we will be working with 3,000 farmers, whose holdings average less than 0.5 hectares, and are living far away from the electricity supply. Most of them practise subsistence farming on small, hilly plots and depend on expensive diesel-powered water pumps or farrow irrigation. Through innovative financing the farmers will be able to purchase solar irrigation systems upfront. The system should then pay for itself through the increase in incomes that come with better crop yields.

There is a significant opportunity to support smallholder farmers

and companies that supply solar-powered irrigation systems. The market is on the cusp of taking off, as solar irrigation pumps prove their market potential. Engaging in further work supporting solar irrigation projects could see us focus on improving distribution economics and helping with access to finance.

In Senegal, we have partnered with the Ministry of Energy to support the country's National Biogas Programme, which seeks to deploy domestic-scale biogas systems for rural households with a range of market development, business advice and technical assistance interventions. We will advise on programme design, and on business and consumer financing models. We will also provide capacity-building to biogas enterprises that sell and install the systems.

We are also collaborating with the Global LEAP Awards Program on an international off-grid refrigeration competition. The competition aims to expand supply, drive demand and strengthen the market for small domestic refrigerators. A second prize will focus on larger refrigeration units for use with agricultural cold chains (chilling milk on the farm or for keeping fresh produce cold at the market).

## Securing farmers' livelihoods through solar-powered irrigation

FuturePump, a company operating in East Africa, has developed a low-cost solar-powered irrigation system that mitigates the impact of unpredictable rainfalls on small-scale farmers in western Kenya. Its portable pumps can lift enough water to irrigate half an acre per hour, so farmers can grow more produce year round. FuturePump is already seeing positive correlations between solar irrigation and smallholders entering the formal economy. Farmers can buy the \$650 system in installments through mobile phone payments. This also helps them to build a good credit history. We helped FuturePump establish its operations in Kenya and introduced them to distributors, sales partners and potential investors. The company was also given access to facilities at the *Kenya Industrial Research and Development Institute* to test the performance of the pump.





# ENERGY4ENTERPRISES

Small and medium-sized businesses and the informal sector are vital in Africa, as they account for 50% of GDP and 63% of employment. Creating infrastructure and access to energy for these businesses is crucial.

Refrigerating dairy goods means producers can reach larger markets, and ice-making facilities allow fishing communities to store and export their catch. With mechanisation, workshops and food processors are more productive. Affordable lighting means businesses, shops, workshops and street vendors can stay open for longer.

In turn, a higher demand for these energy services brings opportunities. Companies involved in everything from manufacturing, supplying, installing and maintaining equipment all stand to benefit.

## Our work to enhance the productive use of energy

Energy is vital for businesses, but access to modern energy alone does not guarantee higher levels of economic activity. Local businesses need to build their capacity and ability to take full advantage of the improved power supply.

We provide enterprise development support to enhance and diversify their business activities. We do so by offering access to finance, business training and mentoring to help businesses make more informed decisions on the use of electricity to increase business productivity and profitability.

We also work with several mini-grid developers in the communities they serve to help local businesses grow and make better use of the new power supply. Expanding productive use in this way helps to improve

both the viability of the power project and its economic impact. We have built models to include productive use demand in energy projections, and shown that it can improve the economic viability of the mini-grid and have positive long-term impacts on economic and social development.

## Energy for economic transformation

We have teamed up with the Tanzanian company JUMEME Rural Power Supply, which launched a solar-powered mini-grid on the Lake Victoria island of Ukara. The system is expected to provide reliable and affordable electricity to nearly 2,000 households and over 200 businesses.

The business combines community-oriented governance arrangements, modular capacity planning, smart meters for demand management and system stability, and a tariff block structure. JUMEME aims not only to address basic energy needs, but also to promote economic development.

## Developing businesses' capacity to profit from access to power

One of the entrepreneurs we have trained is Samweli Nyakalege, who uses the mini-grid power for rice and maize milling. He says: "The new power supply is a blessing, as it enables us to serve more customers more quickly and efficiently. Additionally, it has brought health benefits compared to the old diesel generator." Thanks to the increased volume of sales, Mr Nyakalege was able to employ more staff. He now plans to apply for more funding to further expand his business.

## From phone-charging to beverages: solar-powered success

When we met Ruth Musenyi, a phone charging entrepreneur from the village of Misungwi, northern Tanzania, she was using a car battery to power her charging equipment. Once she had been recruited into one of our micro-enterprise development programmes, she invested in solar-powered equipment.

Tailored business and technology training, along with access to enterprise financing, transformed her business in just a few years. Ruth has opened a barber shop and a pharmacy and, with our support, has obtained a loan from a local financial institution to renovate her business premises, where she has opened a beverage depot.

Her village is soon going to be connected to the national grid, but she sees this as an opportunity rather than a threat to her business.



The mentorship she has received from Energy 4 Impact has put her in a better position to make the most of the energy supply. She will expand her beverages cooling business and diversify into other lines of business. As for the solar phone-charging business, she has the choice of moving it to other remote, off-grid areas where she can reach more customers, or keep it as a back-up for the frequent power outages. Whichever she chooses, the skills she has gained will help her business to perform well.

## Solar phone-charging and business diversification

Solar home systems provide clean electricity for domestic use, but they can also open up business opportunities. There is huge demand for solar phone-charging services in remote areas that are far from the electricity grid. We have been supporting a network of micro-businesses in rural areas of East Africa by helping them access equipment, recruiting and training by mentoring, and helping them to access finance. We've also helped a number of solar photovoltaic phone charging businesses to expand into operations ranging from pay-to-view television to hair cutting.

## Future trends and opportunities

We expect to continue to play an important role in programmes that promote private green mini-grid initiatives. Mini-grid companies do not – yet – have economically viable business models. However, with productive power, the economics can change dramatically.

Our approach is to advise developers in a way that adds value to their businesses. Building on this, we are developing ways of promoting productive end use for mini-grids. As well as supporting the mini-grid companies themselves, we can train and mentor micro-enterprises to use the energy for productive purposes, and we can help them access capital to buy equipment.

Energy 4 Impact is undertaking a feasibility study on productive use of electricity for small businesses connected to Mwenga hydro energy generation and distribution project, in Southern Tanzania. Owned by Rift Valley Energy Ltd., the company operates a 4MW hydro-power station and a rural distribution network, supplying the local tea industry, 17 villages and the national utility company, with an annual generation output of 21.5 GWh. The results of the feasibility studies will inform future strategies for enhancing the productive use of electricity by businesses connected and promoting of electricity usage amongst the domestic consumers. The targeted businesses would likely be in the areas of forestry, carpentry, metal and welding workshops, eggs incubation, chicken rearing, grains mills, mechanical and repair garages, timber dealers and tailoring marts.



# SUPPORT4ENERGY BUSINESSES

Providing clean, reliable and affordable energy to everyone is one of the world's biggest development challenges. But for businesses of all sizes, it is also an opportunity. They can play a critical role in extending the reach of energy services and products and in making sure they are affordable, reliable and of good quality, thereby increasing the benefits that energy access has for low-income consumers and producers.

It has been our aim over the past 10 years to help energy enterprises, from micro-enterprises to SMEs and project developers, to capitalise on those opportunities. We have supported them as they face challenges, whether financial, commercial, technical or regulatory.

Our advisory team offers services that are tailored to meet the specific needs of each enterprise. Some of these companies are pioneering new technologies and innovative business models and need support with research, field-testing and finance.

We help energy businesses with bespoke consulting or longer-term mentoring services, sharing our knowledge of business, financial or technical issues, and helping them raise capital or develop new routes to market, supply chains or partnerships. Each business is treated differently according to their needs, but each one is treated as a client.

It is this client-focused approach that allows us to help develop energy enterprises into businesses that provide more jobs, increase incomes and stimulate demand.

## Our work to support energy businesses

### Micro-enterprise development

We have worked with hundreds of micro businesses that make a real difference to rural energy access, especially in the remotest areas. These are involved in the production and distribution of biomass briquettes and improved cookstoves, in solar mobile phone charging and electricity generation using pico-hydro systems.

We have helped them hone their business skills, develop their market awareness and customer care practices, linked them to others in the supply chain and, in doing so, strengthened the "last mile" delivery chain for energy access. We have also helped them access finance, provided technology support and promoted knowledge-sharing and research so they can increase their effectiveness.

Examples of our work include: building a network of women entrepreneurs selling pico-solar and domestic cookstoves in rural Senegal; promoting clean cooking in schools in Uganda to achieve increased sales for a group of local stove makers and reduced costs for the schools; developing electricity generation using pico-hydro systems in Rwanda; stimulating the growth of briquettes, cookstoves, solar and mobile phone charging businesses in East Africa.

### Advisory services for SMEs

Energy 4 Impact supports a wide range of SMEs – businesses that have great potential to grow and to address energy access issues on a larger scale than micro-businesses. Our support has been financial, strategic and technical.

Some of these companies sell or distribute products and services that improve living conditions in the household: cookstoves, for example, or solar powered kits that can light homes and charge mobile phones.

Others supply the agricultural and business markets with equipment such as solar-powered drip irrigation and refrigeration. Many of these companies are pioneering new technologies to meter use and manage energy distribution and setting up innovative mobile payment systems.

Our dedicated team advises SMEs on strategic and financial planning, supply chain and route-to-markets development, operational management, project development and financing, and helps to forge partnerships between them and other market participants, from governments and regulators to suppliers and distributors.

### Support for mini-grid developers

Mini-grids are frequently said to have huge potential in Africa. The International Energy Agency, for example, estimates that mini-grids will be the best solution for more than half of the population which doesn't have access to power. Yet

## Business mentorship assists entrepreneur to diversify

Energy 4 Impact's advisory team has given Mkirya Magera, a small-scale cotton-grower in Tanzania, the chance to turn his phone charging sideline activity into a profitable business.

He decided to venture into solar phone charging after seeing how he and his fellow villagers had to travel up to two kilometres just to power their mobile phones. He built a small structure where he installed a 60W solar panel at a cost of \$206. The business grew and he was soon charging 20 phones a day. He came into contact with Energy 4 Impact in 2014 and was offered mentorship on financial, technical and business skills. Our team helped him identify further business opportunities.

Through a loan that Energy 4 Impact helped him acquire, Mkirya bought a 200W solar system, which enabled him to serve more customers and repay the loan in a short time. His haircutting business also registered remarkable growth as his income leaped from \$34 to \$103 per month. He reinvested the proceeds into his farming activities and in his children's education.



## Advice to an eco-fuel business to improve its operational performance

Eco-Fuel Africa is amongst the largest briquette manufacturers in East Africa, with a production capacity of 18 tonnes a day. Based in Uganda, the firm uses agricultural waste, mostly from sugarcane, sourced from its network of 2,500 farmers, and its carbonised briquettes are distributed to 2,100 retailers. It has converted 19,000 households to using their briquettes, thereby reducing the need to cut down trees. When Eco-Fuel Africa approached Energy 4 Impact, it had more than enough demand for its product but rains and power outages sometimes caused their production to plummet to 9 tons a day. We created a customised project to help Eco-Fuel Africa address these challenges. The advisory team conducted an in-depth analysis of the various carbonization, drying and briquetting technologies available. We carried out cost benefit and break-even analyses on purchasing additional power generating equipment and alternative drying technologies. The management is now acting on our recommendations.





## Strategic advice for productive use focused business model for mini-grids



Energy 4 Impact provided advisory support to Absolute Energy Africa, a company setting up mini-grid projects in East Africa. We developed a roll-out strategy, identifying the most suitable sites. Our Advisory team conducted market research, highlighting the potential and challenges associated with three types of mini-grid business models – households, institutional and productive use/agro-industry value-chain; as well as a regulatory overview of countries in East Africa. We also undertook a study of agricultural industries in Kenya and ranked each of the counties, based on the potential for energy demand for the various agro value-chains. This helped identify which counties and industries Absolute Energy Africa should target as mini-grid sites for productive uses.

few mini-grids have in fact been successfully deployed in Africa. This is because of the many challenges developers face, including gaps in the policy and regulatory framework, a lack of proven business models, insufficient market data and linkages, the lack of capacity of key stakeholders, and difficulty accessing finance.

With our support, mini-grid developers have overcome obstacles and advanced projects towards financial close and commissioning. We support developers who are using multiple generation technologies (solar PV, hydro, biomass, or renewable-diesel hybrids) through various stages, from market sizing to site selection and equity raising. We have also worked with the communities they serve to ensure that the new energy supply has the most powerful impact possible.

### Supporting innovative models

The off-grid energy access sector is dynamic and constantly evolving, and it is critical that we test ideas to understand what does and doesn't work. Because of the risk involved, however, finding the capital to support this research and development can be challenging.

There are a number of ways in which we are supporting innovative projects, initiatives and business models. We provide financial and technical help so they can realise their ideas, develop their business skills, and provide access to the resources they need in order to grow

### Experimenting with innovation prizes



Donors have long used prizes as a way of encouraging technological innovation. But do prizes work in a development context? We are working within the Ideas 2 Impact consortium to answer this question. Funded by DFID, the programme aims to deliver effective solutions in the areas of climate mitigation and adaptation, energy access, water and sanitation. We are leading the work on energy access and the team is currently working on prizes around solar-powered refrigeration.

Refrigerators can significantly enhance the productivity of small businesses operating in the food value chain. But key barriers on both price and energy consumption need to be addressed before refrigerators become viable for off-grid communities.

Through the Ideas 2 Impact consortium, we have partnered with Global LEAP to support a prize focusing on refrigerators suitable for small retailers. Refrigeration in the off-grid space is still a nascent market and these prizes could help to accelerate development and distribution of products by creating commercial markets.

## Future trends and opportunities

Large initiatives continue to focus on ambitious and often challenging grid-connection programmes, but there is growing interest in decentralised generation and distribution through mini-grids. Our practical experience in mini-grid development has caught the attention of multiple donors and over the next couple of years we will be advising more mini-grid developers across sub-Saharan Africa.

The African Development Bank has engaged us to implement its

technical assistance facility for project developers in its Africa-wide Green Mini-Grid Market Development Programme. Together with our partner INENSUS, a green mini-grid (GMG) developer in Tanzania and Senegal and technical advisor across Africa, we will assist developers with issues ranging from business planning, market development and grid design to project finance, grid operation and maintenance. We have also helped implement a website and online help-desk for GMG developers across Africa.

More recently, Energy 4 Impact has signed a contract with the International Finance Corporation to manage its

Transaction Advisory Services Facility, which will support green mini-grid project development in Tanzania. A learning-by-doing approach will help us demonstrate which business models are most likely to succeed and how the challenges can be overcome.

In Rwanda, we have helped the US Global Development Lab with cost-benefits analyses to evaluate the impact of the Lab's investments in off-grid energy. We used information gathered from focus groups and from household survey data to build cost-benefits analysis models and estimate the benefits to consumers.

## Incubating climate technology start-ups

The Kenya Climate Innovation Center (KCIC) provides business incubation, training and advisory services, financing and facilities to allow companies to test and develop innovative new approaches for a green and climate-resilient economy in Kenya.

Over the last three years we have engaged with 34 renewable energy start-up companies incubated by the KCIC, helping them with capital-raising and providing strategic and technical advisory services, project development, financial planning and analysis, marketing and distribution advice.

One such business is Eco-Charcoal Limited, a Kenyan company producing and distributing charcoal briquettes made from pruned tree branches. Procuring fuel for cooking is a challenge especially for low-income people, who spend an average of \$1.50 per day on charcoal and firewood.

Energy 4 Impact, through the Kenya Climate Innovation Center, has advised the company on their business and financial strategy and provided marketing training and business linkages support. We are also supporting Eco-Charcoal to raise funds through a crowdfunding platform to scale-up their briquette production.





# CAPITAL 4 ENERGY ENTERPRISES



Access to finance is critical for the growth of small-scale off-grid businesses in Africa. However, there are many impediments to financing on both the supply side and the demand side.

On the supply side, grant providers can be inflexible and be slow to disburse funds, and have high transaction costs. Investors are often cautious because of the lack of proven, scalable business models, the low risk-adjusted returns and the lack of successful exits.

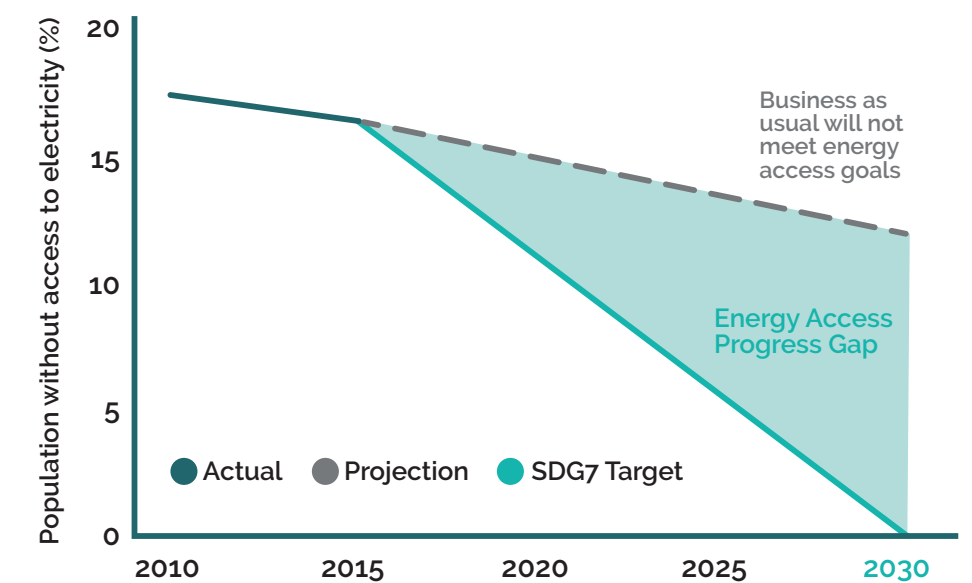
Local banks are also generally risk averse and many have limited knowledge of off-grid businesses and cash-flow lending. Many banks still see micro-renewables as an unattractive, high-risk, low-volume business. International lenders, meanwhile, worry about the foreign exchange risk and are put off by the small ticket size of off-grid transactions.

On the demand side, many off-grid entrepreneurs have limited experience of the requirements of the capital providers.

## Our work to help energy enterprises raise capital

We advise off-grid enterprises on how to raise different forms of public and private capital. We support their applications for public grants and sometimes make joint applications with them. We provide transaction advice, assist in the preparation of investor materials, make introductions to investors, and support ongoing negotiations. Over the past 10 years, the companies we have supported have raised over \$100 million; despite the challenges, we are starting to see progress, as discussed in the box below, albeit concentrated on a small number of countries and sectors.

## Projections for SDG7: Access to clean energy



Source: Power for All

To meet Sustainable Development Goal 7 (clean, affordable, modern energy for all) by 2030 we need a 'revolution' in progress towards the universal energy access target. This chart is a stark illustration of how far we are off track. But decentralised solutions, such as mini-grids and solar home systems, are key to closing the energy access progress gap. This is a huge opportunity for all the actors involved in the energy and development sector.



Micro-credit support

Energy 4 Impact manages loan guarantees and provides technical assistance to micro-enterprises to help improve their access to loans. We have tried to address market failures around lending by intervening in two areas: first by providing business, technical and financial mentoring to the enterprises, including advice on applying for and managing loans; and second by providing training on renewable energy to local micro-finance providers and offering them guarantees to cover a part of the loss from borrowers defaulting on their loans.

Over the last four years, we have arranged loan guarantees for 16 financial institutions across four East African countries, resulting in over 330 loans to off-grid micro-enterprises, with an average loan size of around \$850. This helps get micro-enterprises on the "capital access ladder": in a recent study we found that entrepreneurs whom we had helped to secure a loan in this way were three times more likely than non-borrowing entrepreneurs to secure a subsequent loan in the two years following our support.

Crowdfunding for energy projects

Some innovative energy access projects are turning to crowdfunding for finance. But little is known about how effective this tool is in kick-starting projects in developing countries.

We are implementing a programme that tests whether grants by public agencies can accelerate the impact of crowdfunding. Funded by DFID, Crowd Power provides direct financial support to crowdfunding campaigns, trialling a variety of approaches such as match-funding, guarantees (insurance), and 'gift' vouchers. It also produces

in-depth research. So far we have successfully supported 11 campaigns.

Our recent study, Mapping the Market for Energy Access, gives an overview of the crowdfunding for energy access market in sub-Saharan Africa and Asia and shows that this is still a niche market segment. Only \$3.4 million was raised for individuals, charities, NGOs and social enterprises in Africa and Asia in 2015. Furthermore it is concentrated in a few countries with 45% of it in just one country (Kenya).

The situation could be poised to change, as changes to financial regulations enable the development of debt and equity campaigns, and investors are drawn to triple-bottom-line returns offered by crowdfunding platforms. Early this year two record-breaking equity campaigns funded on Crowdcube, raised equity of over \$2 million combined. Trine, a Swedish platform investing in solar distribution businesses in Africa and Asia, also launched at the beginning of the year and has since funded a number of campaigns.

Future trends and opportunities

We will continue to provide support to businesses accessing capital, from micro-enterprises that require a few hundred dollars to mini-grid developers and solar home system providers that need millions of dollars.

We are also exploring new approaches to facilitating lending to off-grid micro-enterprises. These will aim to align the interests of borrowers and lenders as closely as possible, and explore the potential of financial technologies, to reduce collateral requirements and accelerate loan approval times.

An important area will be private lending to mini-grids. Most mini-grids are still funded through public grants and subsidies and private equity investments, with very little lending. The arrival of financial investors and strategic players such as global utilities and equipment suppliers suggests the mini-grid sector is getting more mature, but there is still a long way to go.

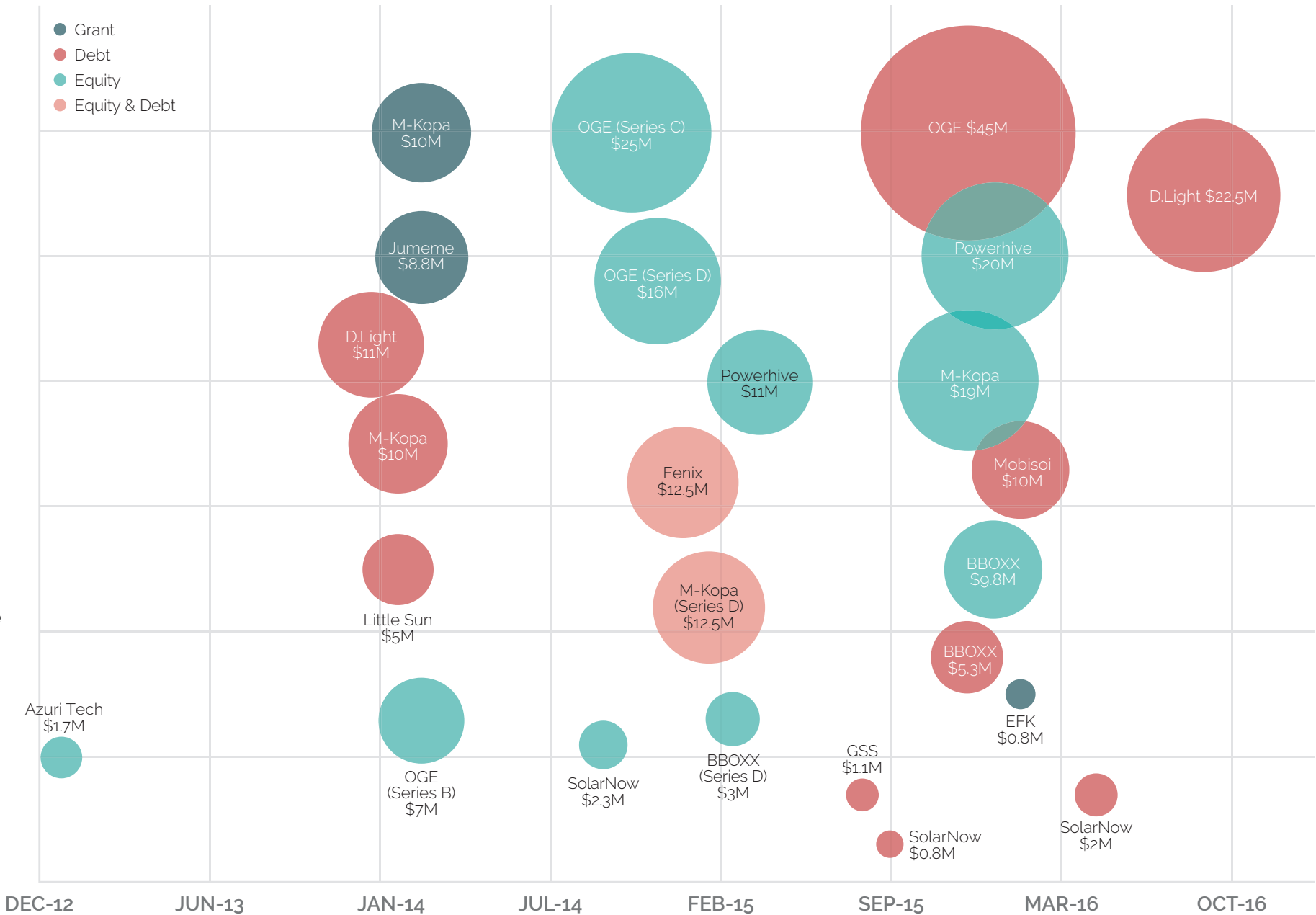
Over the last four years, we have arranged loan guarantees for 16 financial institutions across four East African countries

Mini-grids may be financed at the corporate level (e.g. a developer) or project level (e.g. a large mini-grid or group of smaller mini-grids with similar characteristics). Each has its advantages and disadvantages but most mini-grids do not have sufficiently predictable cash-flows for stand-alone project loans and their ticket sizes are too small to justify the high upfront structuring and due diligence costs of project finance. We are currently managing three different mini-grid programmes on behalf of donors including the African Development Bank, IFC and World Bank, and capital-raising is a key component.

Crowdfunding is likely to play an increasing role for energy access over the next few years. The market in 2015 was small but it is growing rapidly, with a number of major transactions already closed in 2016. As a follow up to Crowd Power, we have secured funding from DFID to design a "peer-to-peer lending" model to bring together the crowd and businesses providing solar home systems to families in sub-Saharan Africa on a pay-as-you-go basis.

We aim to launch first campaign spring 2017. The target is to raise £3 million in the first year of activity, which will benefit 20,000 households.

Capital flows into energy access businesses



This chart shows that capital flows into energy access businesses have been increasing in recent years, albeit from a low base. However, these increases are dominated by the working capital needs of a few pay-as-you-go solar home systems companies, selling mainly in just three or four countries. The challenge in the future will be to support the growth of these business models in "new" countries, possibly with the backing of different (i.e. more "pioneering") types of capital.



# ENERGY4EDUCATION

It is estimated that an extra year of good schooling can lift a country's annual economic growth by 1% (DFID 2015). Yet education is limited for millions of children in the developing world because of poverty, conflict, health issues or the need to support their families.

Children are often expected to help with farm work, fetch water and collect fuel wood for cooking. Modern energy services in the home can reduce this burden on children, giving them more time to study and go to school. They can also provide lighting for studying after dark.

Schools can also benefit hugely from access to electricity. It means they can open in the evening, whether for extra classes for children or for adult education. And computers and the internet provide access to educational material, distance learning and continuing education for teachers.

## Our work in the education sector

### Improved cookstoves in schools

Sub-Saharan African schools spend large amounts on wood or charcoal for cooking. Improved cookstoves require 50% less firewood and can

save a school around \$450 per year. In a typical school of 300 students this would be more than enough to fund the appointment of an additional teacher.

In Uganda, Energy 4 Impact has worked with 18 manufacturers who provide certified, high-quality cookstoves to schools. They have installed cookstoves in 389 schools, benefiting 210,570 students and staff, and saving the schools a total of \$175,000 per year.

### Solar electricity powering schools

We have worked with businesses and mini-grid developers that provide solar-powered electricity to schools, helping them secure project-level capital and win grants to expand their sites. With access to electricity, schools that once relied on kerosene lamps for studying in the early mornings and evenings can allow students to put more hours into their studies, as well as cut fuel costs.

## Future trends and opportunities

We plan to continue our work in Uganda to increase the adoption of improved cookstoves in schools. We will provide advice and mentoring to stove producers, promote the benefits of improved cookstoves to schools, and partner with the financial sector to facilitate loans for cookstoves. There is scope to expand this programme for schools across East Africa.

As the market for solar home systems expands and the demand for affordable systems increases among institutions, we expect to work with more private sector companies that offer competitive solar products and after-sale services to schools.

Community and social facilities, including schools, are frequently among the primary beneficiaries specified in the business case for a new mini-grid or micro-hydro project. As more opportunities emerge in mini-grid development in East Africa, we will continue to advise operators on development and on access to capital, so that their benefits can be fully realised.

## Lower costs and higher standards

One of these businesses is PowerGen, a renewable energy company that provides off-grid communities in Kenya with access to energy through solar micro-grids. Among the beneficiaries of the new source of power is Mark Matunga Kiwa Mixed Secondary School in Kiwa island, off the shore of Lake Victoria in, Kenya. The school used to spend about \$20 every month on fuel and maintenance for kerosene lamps. Since the school was connected to the power last year, the school has managed to cut this cost in half.

The accrued savings are being ploughed back to development initiatives for the junior school and some funds are being put aside for planned expansion of power coverage in the school to cover more classes, a laboratory and a library, as well as erecting of a perimeter fence and a lit gate to secure the school.

## The school that is saving money and improving health

At Cornestone Junior & Primary school in Kitete, Central Uganda, the number of students had rapidly increased and expenses in firewood reached \$940 per term. The school had two efficient cookstoves installed in the junior section and were so impressed that they resolved to order an additional two sets for the primary school. They are also planning on purchasing two more with the \$470 per term they now save on firewood consumption. "The cooks are now happy because they work in a clean and healthy environment. They no longer complain about chest congestions and irritated eyes caused by the smoke," explains school administrator Anne Kissa.



Modern energy services in the home can reduce this burden on children, giving them more time to study and go to school. They can also provide lighting for studying after dark.







# ENERGY4HOMES

In rural Africa, poor households can spend up to 35% of their income on inefficient energy forms: fuelwood, charcoal, biomass or coal-based fuels for cooking, and expensive and dangerous candles or kerosene lamps for lighting. Yet the needs of off-grid communities can easily be met by decentralised renewable energy technologies.

Affordable energy solutions can reduce indoor air pollution, cut household costs and free up the time spent gathering fuelwood or charging mobile phones. Modern energy can also help generate income and, as incomes increase, the demand for home appliances and services also grows.

## Our work supporting households to access energy

The problems of access to modern energy services in rural areas present an opportunity for energy businesses to fill the gaps. We have worked with micro and small companies in sub-Saharan Africa to increase the availability, awareness of and demand for solar lights, efficient cookstoves and cleaner biomass fuels.

We have helped businesses that have pioneered some of the most

innovative financing mechanisms and distribution strategies for solar home systems and solar kits.

We have also supported project developers seeking to build village-scale mini-grids powered by very small-scale hydro projects.

## Bigger markets for energy products

Energy 4 Impact has helped thousands of micro-businesses in the cookstove, solar mobile-phone charging, briquette and pico-hydro sectors transform from small, subsistence operations into sustainable businesses. Most of these operate in rural communities where the energy gap is widest.

Last year, we organised 86 market development activities throughout Uganda, Tanzania, Kenya and Rwanda to promote product awareness and demand. These activities have helped businesses promote their products to potential customers and distributors, meet competitors and explore new markets. The result was increased sales and strengthened commercial relations. Markets for energy products and services have expanded and the availability of affordable high-performance products has grown among the communities that need them the most.

## Introducing a "higher tier" affordable cookstove design to Kenyan manufacturers

In a bid to strengthen the supply and demand in the cookstove sector,

while supporting local economies, we have worked with a number of Kenyan stove artisans to develop a new model of stove, which boasts improved performance and quality at an affordable price. Under rigorous tests, the new stove – the Jiko Smart – showed a significant degree of efficiency, reduced emissions and improved safety and durability compared with existing models available locally.

Over the past year, we have helped boost the distribution of the Jiko Smart to more rural and remote markets through market development events and roadshows that created new business opportunities for the stove manufacturers. Since it was launched, over 20,000 units have been sold, with an estimated 158,000 tonnes of CO<sub>2</sub> saved.

## Boosting women's entrepreneurship

Women are major consumers of household-level energy. Access to modern energy products and services is crucial for them, as they spend hours each day collecting firewood, cooking on smoky cookstoves, and doing household chores in poor lighting. As primary household energy managers women can be powerful agents of change in the transition to sustainable energy.

As entrepreneurs, they are also key to providing solutions. We work with many women who are making their mark as entrepreneurs involved in the production, processing, distributing and selling energy products or services. We empower them through financial, technical and business management capacity development support to integrate them into the energy value chain. Their activities have a positive impact, not only on the economic development of the communities in which they live, but also on the well-being of their families.

**We have helped businesses that have pioneered some of the most innovative financing mechanisms and distribution strategies for solar home systems and solar kits.**



# Support to expand solar-powered services

Chantal Nikuze owns a phone charging and hair cutting business in rural Rwanda, which she used to power through a generator and a car battery. As demand for her services grew, she bought a solar panel, but challenged by her lack of technical and business development skills, she struggled to take it to the next level. Energy 4 Impact worked with Chantal on a business and marketing strategy and helped her procure a solar system able to

address the demand for charging, shaving, as well as powering a home entertainment system to show films. She also started renting out rechargeable solar lanterns as an extra sideline activity. "Energy 4 Impact's training in technology, business management, marketing and customer care has been extremely valuable, it has enabled me to become the solar energy service provider in my community."



## Helping deliver affordable solar home systems via pay-as-you-go

Small-scale, portable solar solutions are a great entry level product for off-grid communities but larger home PV installation provide better energy access. Cost, however, is the main barrier to market expansion of these systems among poor, rural communities.

Many consumers in off-grid areas cannot afford the upfront cost of solar energy products. Business models such as pay-as-you-go solar power have the potential to unlock segments of the market by making clean electricity affordable to poor households.

## Energy as a service via digital finance

Some businesses are taking a different approach to improving the affordability for poor customers of energy products with high upfront costs.

Their business model is to retain ownership of the technology (and the associated risk) and to sell energy as a service for an affordable daily or weekly fee. Selling electricity this way brings its own challenges. One is how to allow people to pay in small amounts. There's a transaction cost for each payment, so the smaller the payment, the higher the transaction cost as a proportion of the total.

Technologies such as mobile payment and rent-to-buy are helping address these challenges. 'Mobile money' – a mechanism where customers pay via mobile phones – is increasingly used as a method of payment in Africa.

Based on our experience of advising companies in the African market, we advised IDCOL, the implementer of a four million unit solar home system programme in Bangladesh, on the economics of switching from manual payments to mobile payments.

## Future trends and opportunities

We expect to do more advisory work with mini-grid projects that could connect homes and businesses.

We are also planning to advise more early-stage micro and small businesses, who are providing products and services in areas such as clean cooking, solar home systems, and domestic-scale biogas.

Other opportunities could develop from the market potential of low power appliances, such as fans, TVs and fridges, compatible with the supply offered by solar home systems and mini-grids. Research shows that affordability is again a key barrier to the development of these markets. But as households move up the "energy ladder" and gain financially from reduced energy costs, we are starting to see companies take the opportunity to use the same pay-as-you-go approaches for these appliances, to complement their existing product ranges and increase energy demand. At the same time, the households experience quality of life benefits of energy access which go beyond the "traditional" considerations of better lighting and phone charging.

# Selling solar appliances on credit



SunTransfer sells solar home systems for off-grid households in Kenya, using a pay-as-you-go rent-to-own model. From its 10 solar centres, the company distributes solar home systems and TVs as packaged kits, which are offered on a cash basis or on credit with an 18 month repayment model. It also offers free installation, an after-sales service and a warranty.

We helped SunTransfer refine its business strategy and positioning after a period of non-performance. By focusing on high quality appliances and rationalising its product range, the company has repositioned itself as a premium brand. It can now give customers more options by allowing them to customise their packages and, in turn, buy extra appliances.





# ENERGY4REFUGEES

There are 65 million displaced people around the world. Refugee camps often rely on diesel generators to power facilities such as health centres and schools, and the people living in these camps often have to use traditional biomass for cooking and kerosene or torches for lighting. Outside camps, where most refugees live, the extra pressure on resources and infrastructure can add to the energy challenges faced by the host community.

## Our work in the humanitarian sector

We set up a major initiative looking at how the humanitarian sector can better support the energy needs of displaced people, and what role the private sector can play.

The Moving Energy Initiative is a collaboration between Energy 4 Impact, Chatham House, Practical Action Consulting, the Norwegian Refugee Council (NRC) and the Office of the United Nations High Commissioner for Refugees (UNHCR). It is funded by DFID.

Over the past year the consortium has conducted research in Kenya, Burkina Faso and Jordan on the scope for new approaches to providing energy access and management. Focusing on issues of sustainable energy access and management for heating/cooling, cooking, lighting, water

and sanitation, communication or other purposes, the initiative in investigating best energy practice, in terms of camp management, service provision, business models and private sector engagement, or partnerships with local authorities.

The findings were published in a global report called Heat, Light and Power for Refugees: Saving Lives, Reducing Costs and a series of toolkits and surveys, which are available online at [www.mei.chathamhouse.org](http://www.mei.chathamhouse.org).

We have now kicked off the second phase of the programme with initiatives designed to address bottlenecks and demonstrate new approaches on the ground.

These initiatives combine a mix of global and local interventions including optimising the management of energy consumption and related data, addressing funding challenges, finding new ways to engage the private sector, improving

**We hope to learn important lessons from the new approaches on the ground that we demonstrate in Phase 2 of the Moving Energy Initiative and that this will influence others in the humanitarian sector.**

the management of energy infrastructure, promoting low carbon interventions, and supporting local market development amongst others.

Over the next year Moving Energy Initiative is going to design and test new ways to break down the barriers to expanding energy access and improving energy management. The programme will work with stakeholders to improve the way solutions are delivered, and to encourage the widespread adoption of new practices.

## Future trends and opportunities

We hope to learn important lessons from the new approaches on the ground that we demonstrate in Phase 2 of the Moving Energy Initiative and that this will influence others in the humanitarian sector. After Phase 2 we plan to scale up and replicate many of these projects, including market development activities that encourage the provision of energy products and services through local markets, strengthening local supply chains and the resilience of the refugees and host community.

We will also conduct feasibility studies on establishing a sustainable financing facility to invest in humanitarian energy interventions, which can serve as a longer term mechanism for financing projects across the globe, and develop a technical assistance facility to help stakeholders design and deliver projects effectively. With 65 million displaced people in the world we hope Moving Energy Initiative can continue to spread the seeds of change.



# RESEARCH

At Energy 4 Impact, we base our intervention plans on evidence. We gather and analyse data and conduct research so we can understand the markets and determine which interventions are the most effective.

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This is important as the off-grid energy access sector is constantly evolving and donors are always looking for the best ways to deploy public funds in order to encourage private investment.

We have added to the global understanding of local energy markets with our published research, and our on-the-ground experience has provided insights to other practitioners and policymakers.

- Our report, *Stimulating Solutions to Energy Access Through the Use of Innovation Prizes*, which examines the application of innovation prizes to energy access problems, has been influential in the UK Government's interventions in this area.
- An article, published in the 2016 *Field Actions Science Reports*, looks at the evidence of benefits and issues of affordability to users of pay-as-you-go solar PV in Rwanda, following the experiences of Azuri Technologies selling home solar installations to rural households.

- Through the Moving Energy Initiative's flagship report *Heat Light And Power For Refugees: Saving Lives, Reducing Costs* we are influencing the way energy is managed within the humanitarian sector. The report suggests new approaches that could benefit refugees and displaced people, host countries and the environment.
- Our study *How do energy micro-businesses grow?* points to ways of better targeting support to informal sector energy businesses, and informs future strategies for micro-enterprise development programme in East Africa.
- As part of the DFID-funded crowdfunding initiative, we have published the first of a series of studies: *Crowd Power: Mapping the Market for Energy Access*, which is an overview of the crowdfunding for energy access market. Over the next two years we will carry out more studies exploring the role of crowdfunding and identifying the key learnings and recommendations.
- Energy 4 Impact was invited to write the business training section of the Global Alliance for Clean Cookstoves' Empowered Entrepreneur Training Handbook, which is designed to support organisations working with women entrepreneurs and sales agents who provide household energy technologies.
- We are influencing and supporting our partner organisation, the Global Lighting and Energy Access Partnership (Global LEAP), whose goal is to catalyse the development of commercial markets for energy access solutions.
- We were commissioned by the African Development Bank to analyse the barriers to growth of green mini-grids in sub-Saharan Africa. Our report informed the next stage of our engagement with the Bank, which is focusing on actual delivery of practical support to green mini-grid developers to help them upscale and accelerate energy access.

# FUNDING

Total income for the year was £3,722,246 comprising unrestricted income of £1,138,688 and restricted income of £2,583,558. This represents an increase of 14% from last year's figure. Energy 4 Impact is grateful to our funders for their continued support. Please see below table for the list of our current funders in 2015/16. Total expenditure was £3,382,253 for the year, of which £810,670 was unrestricted and £2,571,583 was restricted. This represents a decrease of 25% from last year's figure.

Below are our main sources of funding in 2015/16 and a summary of the projects, activities, consultancies undertaken in each case..

Swedish International  
Development  
Cooperation  
Agency (Sida)



**Capital Access for Renewable Energy Enterprises (CARE2)** – A four-year \$10.4 million programme that created 5,467 new jobs in 1,271 e-MSMEs (micro, small and medium energy-focused enterprises) and addressed multiple barriers to growth in Kenya, Uganda, Tanzania, and Rwanda. CARE2 had three components: an Enterprise Support Team providing business, financing and technology advice to SMEs; a Capital Access programme providing access to finance; four country projects, targeting defined niches and designed to stimulate the creation and growth of energy businesses in cookstoves, mobile phone charging, briquettes and other markets.

**SCALING UP OFF-GRID ENERGY IN RWANDA (SOGER)** – This programme started in July 2016, and aims to grow sustainable off-grid renewable energy markets by supporting private sector companies to deliver energy access to an estimated 77,000 people in poor rural areas and create 7,000 jobs. The programme is designed to respond to the government's priorities in reducing poverty and increasing energy access in rural areas. It involves a facility to support small, isolated mini-grid projects providing electricity to rural communities. It also focuses on giving small farmers access to solar powered irrigation systems to increase their productivity.

UK Department for  
International  
Development  
(DFID)



**Ideas 2 Impact** – Energy 4 Impact is part of a consortium that is implementing a five-year programme to support innovation in the development sector. It will run five prizes designed to incentivise innovative problem-solving around key challenges in energy access, water and sanitation and climate adaptation. We are the energy access theme lead on the project team.

**Moving Energy Initiative** – We are leading a consortium on a ground-breaking new project that seeks to meet the energy needs of refugees and internally displaced persons in a way that reduces costs, is safe, healthy and respectful. The initiative will emphasise local realities and integrate them with global technological advancements, through research, evidence-building and sustainable energy pilot projects.

**Crowd Power** – A three-year programme to stimulate, develop and learn from crowdfunding into renewable energy enterprises in sub-Saharan Africa and Asia. We provide direct financial support to crowdfunding campaigns trialling a variety of approaches such as match-funding, guarantees (insurance) and/or grants or "gift" funding, and produce in-depth research and analysis of lessons learned.

**P2P Solar Africa** – An initiative to finance businesses supplying solar home-systems to households in sub-Saharan Africa via peer-to-peer lending. We are working with DFID and crowdfunding platforms in the UK to facilitate lending from small-scale UK investors to reputable businesses.



**The Ministry for Foreign Affairs of Finland Energy and Environment Partnership (EEP)**



**Jumeme** – We have implemented a mini-grid demonstration project in partnership with private energy businesses INENSUS and Terra Projects and St Augustine University of Tanzania. The project aims to connect nearly a thousand households and 350 businesses, with Energy 4 Impact playing a key role in developing productive use demand. The EEP grant is also aimed to unlock the commercial capital necessary for the next phase: 15 more rural villages, serving a total population of 80,000.

**Redavia** – We offered strategic advice to Redavia, a company providing low-cost energy from redeployable solar farms to roll-out leasing of mini-grids model for agro processing companies and communities in Tanzania

**ENERGIA (governments of Finland, Norway and Sweden)**



**Energy Opportunities for Women in Senegal** – This three-year initiative, implemented with local partner SEM Fund, aims to improve livelihoods, incomes and employment in rural areas in Senegal. It will support 250 micro-enterprises engaged in both expanding energy access and productive uses.

**Integrating gender issues in energy policies in Senegal** – This is an advocacy and communications programme we are running in partnership with SEM Fund. We are advocating for the integration of clear gender objectives and actions within the SE4ALL national action plan and investment prospectus. We are also raising awareness of issues related to women's economic empowerment within the global campaign on energy, women, children and health.

**Russian Ministry of Finance via the World Bank**



**Energy for Business Development (EBD)** – This \$3.23 million programme provides advisory services and capacity building support for micro, small and medium enterprises that are developing productive use activities of newly electrified villages, clean cooking and women's economic empowerment in Kenya, Tanzania, Senegal, and Uganda. EBD is the second phase of the Energy SMEs Programme, financed by the ESME Trust Fund, which is administered by the World Bank. Building on the lessons we learned in the first phase, this programme is helping energy businesses and project developers to grow the markets in sub-Saharan Africa.

**African Development Bank**



**Green Mini-Grid Market Development Programme** – We have teamed up with INENSUS, a green mini-grid developer, to deliver an 18-month programme on green mini-grid market development. We support developers on issues ranging from business planning, market development and grid design to project finance, grid operation and maintenance. The main objectives are to accelerate the development cycle of green mini-grid projects and improve their bankability, to create links between market actors and contribute to the evidence base of commercially viable projects.

**British and Danish governments via the World Bank**



**Kenya Climate Innovation Center (KCIC)**

KCIC provides business incubation services, including access to capital and business advice as well as workshops, laboratories and office facilities. We are one of four consortium members, who have supported 137 enterprises, played a pivotal role in creating 1,500 jobs, increasing access to energy, water, sanitation and improving agricultural productivity in Kenya.

**US Department of State**



**Women Integration into Renewable Energy Value Chains in Support of wPower**

– Working in conjunction with wPower (a US Department of State initiative) this programme is designed to strengthen the role of women in the clean cooking and off-grid lighting supply chains in Kenya and Tanzania. The programme is targeting the integration of 400 women in the renewable energy value chains by providing them with business and technology training and mentorship, and helping them access finance and marketing opportunities.

**International Finance Corporation**



**Transaction Advisory Services Facility (TASF)** to support green mini-grid project development in Tanzania – The TASF is part of IFC's Tanzanian Mini-grid Programme, managed in partnership with the Government of Tanzania, which is in turn funded through the Scaling Renewable Energy Programme (SREP). In collaboration with Tanzanian and international partners, Energy 4 Impact is assisting private mini-grid developers in designing, developing, implementing and scaling of individual green mini-grid projects in the country.

**USAID DIV/ Azuri Technologies**



**Indigo solar lighting: PAYG with Azuri Technologies** – This \$1 million programme aimed to deploy 10,000 solar home systems in Rwanda in a sustainable and ultimately self-financing way. We supported both Azuri and its in-country distributors. The project is expected to provide a template for the deployment of pay-as-you-go (PAYG) solar systems in other countries.



# FINANCES

The unrestricted reserves of £918,892 represents an increase of £ 271,742 on last year's figure. This increase reflects good levels of overhead recovery from existing projects and consultancy, supported by a continued focus on cost control and financial management. The charity's aim is to maintain a sound level of reserves to continue to deliver its charitable activity.

## Statement of financial activities for the year ended 31 March 2016

	2016 Unrestricted £	2016 Restricted £	2016 Total £	2015 Total £
<b>Income from:</b>				
Donations and legacies	44,653	-	<b>44,653</b>	3,922
Charitable activities - grants	942,553	2,583,558	<b>3,526,111</b>	3,090,917
Charitable activities - consultancy	148,801	-	<b>148,801</b>	162,550
Investments	259	-	<b>259</b>	1,117
Other income	2,422	-	<b>2,422</b>	-
<b>Total income</b>	<b>1,138,688</b>	<b>2,583,558</b>	<b>3,722,246</b>	<b>3,258,506</b>
<b>Expenditure on:</b>				
Raising funds	75,292	-	<b>75,292</b>	62,207
Charitable activities	735,377	2,571,584	<b>3,306,961</b>	4,468,292
<b>Total expenditure</b>	<b>810,669</b>	<b>2,571,584</b>	<b>3,382,253</b>	<b>4,530,499</b>
<b>Net income / (expenditure)</b>	<b>328,019</b>	<b>11,974</b>	<b>339,993</b>	<b>(1,271,993)</b>
<b>Transfers between funds</b>	<b>(56,277)</b>	<b>56,277</b>	<b>-</b>	<b>-</b>
<b>Net movement in funds</b>	<b>271,742</b>	<b>68,251</b>	<b>339,993</b>	<b>(1,271,993)</b>
<b>Reconciliation of funds:</b>				
Total funds balances brought forward	647,150	326,037	<b>973,187</b>	2,245,180
<b>Total fund balances carried forward</b>	<b>918,892</b>	<b>394,288</b>	<b>1,313,180</b>	<b>973,187</b>

# TRUSTEES

**Matthew Mendis**, Chairperson, Senior Vice President, Government Services at Nexant Inc,

**The Honorable Carole L. Brookins**, Managing Director of Public Capital Advisors, LLC, and former United States Executive Director to the World Bank in Washington, DC

**Emily Unwin**, Lawyer at ClientEarth

**Matthew Whittell**, Head of Finance and Resources at John Ellerman Foundation

**Dr Anil Cabraal**, Renewable and Rural Energy Consultant and a Director of KMRI Lanka (pvt) Ltd.

**Thierno Bocar Tall**, CEO of the African Biofuel and Renewable Energy Company

**Carolyn Tobin**, Management Consultant, formerly Director of Corporate Finance for Clear Channel International

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