

A woman with dark hair, wearing a white lab coat, is focused on operating a green industrial machine. The setting is dark, with some light reflecting off the machine and the woman's coat. In the background, there are stacks of large white sacks and some structural elements of a building.

**WOMEN ENTREPRENEURSHIP
DELIVERING SUSTAINABLE
ENERGY FOR ALL**

Issue 15, Volume 1, December 2014

ENERGIA NEWS

NEWSLETTER OF THE ENERGIA INTERNATIONAL NETWORK ON GENDER AND SUSTAINABLE ENERGY

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This newsletter is published by the ENERGIA International Secretariat, hosted by ETC Foundation.

The ENERGIA International Network on Gender and Sustainable Energy was established in 1996 to create an institutional base for like-minded organisations and individuals to galvanise actions aimed at integrating gender into the energy access agenda of developing countries. Our long term development objective is that men and women have equal and equitable access to and control over sustainable energy services as an essential right to development. We try to achieve that through fostering women's economic empowerment, research, advocacy, policy influencing and knowledge and information sharing.

ENERGIA International Secretariat
c/o ETC Foundation
P.O. Box 64, 3830 AB Leusden
The Netherlands
Tel. +31 (0) 33 432 6000
Fax +31 (0) 33 494 0791
E-mail energia@etcnl.nl
Website www.energia.org

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Editors

Ms. Joy Clancy
Ms. Sheila Oparaocha

English editing

Giles Stacey, ENGLISHWORKS

Printing

BDU, Barneveld

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Cover photo: Josephine Ngumba owns a small charcoal briquette producing business in Kikuyu, close to Nairobi, Kenya. With her briquettes, she provides cooking fuel to neighbouring households, hotels and schools.

Photo: Francis Muchiri/Practical Action East Africa

EDITORIAL

This issue of ENERGIA News (EN) is the first for some months. However, this is not a sign that the network has been inactive - far from it! ENERGIA has been finalising a successful phase four and starting a fifth phase. During phase four, one of the successes linked to advocacy on gender and energy has been the pleasing sight of more organisations adopting gender approaches in their work. For example, the World Bank's African Renewable Energy Access (AFREA) programme is active in six African countries, working with utilities and rural energy agencies to develop their institutional capacity to carry out gender assessments and develop gender action plans. The Norwegian Development Agency, Norad, has also been mainstreaming gender in its energy programmes, including in the petroleum sector. This can be considered ground-breaking since many question whether there are gender issues in oil. The work ENERGIA has done for Norad has shown that, clearly, there are gender issues in the local impacts of petroleum development and in community development projects: women will generally be more negatively affected than men. The sector is also missing out on a pool of talent by not recruiting and retaining women engineers and scientists.



Another organisation that has also started to specifically mainstream gender in its work is the UK-based charity Ashden, which supports pioneers in sustainable energy to accelerate the transition to a low-carbon world. Since 2001, Ashden has been recognising these efforts through its awards scheme. This year, Ashden specifically allocated one of its awards to an organisation that has demonstrated, through its business approach, increased access by women to clean energy – both as consumers and in the supply and distribution chain. In this issue of EN, we highlight both the winner of the award (Greenway Grameen Infra - GGI) and some other inspiring stories of young energy entrepreneurs recognised by Ashden. GGI has learnt from and acted upon an important lesson of so many failed stoves programmes – that if you do not involve women in the design of the stove they will not be adopted. Selling an

improved stove for US\$23, which is a considerable investment for households in rural India, is no mean feat. In three years, GGI has sold 120,000 stoves which must mean that they have got something right, and we are certain that it is involving rural women, the potential end-users, in the design.

One of the major activities for ENERGIA during phase five will be supporting enterprises promoting access to clean energy. Although we will continue with our advocacy and policy-influencing initiatives, we are taking new steps by supporting initiatives that promote women's access to clean energy on a much larger scale than we have in the past. Over the course of three years, we aim to empower 3000 women entrepreneurs in the delivery of energy services, thereby reaching over 2,000,000 consumers in Asia and Africa. In this issue of EN, we introduce the five partner organisations that we are supporting. This work is part our commitment to the UN Sustainable Energy for All (SE4All) initiative.

ENERGIA is strengthening its advocacy and policy-influencing efforts through another new endeavour: generating robust empirical evidence to better understand what works and what does not work when it comes to energy sector investments aimed at addressing women's specific needs for modern energy services. Much of the existing evidence is based on case studies which, while providing very useful insights, often focus on women and leave men out of the picture. However, we know men also play an important role in sustainable energy access in households and enterprises, and so we need to include them in the evidence. We need to understand whether policy processes in the energy sector, such as tariff reform, have gendered effects in access to clean energy. In this context, ENERGIA is starting a major five-year research programme, funded by the UK Department for International Development (DFID), which will provide a body of evidence to help formulate effective interventions.

ENERGIA News guest editors

*Joy Clancy, Associate Professor, University of Twente and
Principal Investigator ENERGIA Gender and EnergyResearch Programme*

Sheila Oparaocha, ENERGIA International Coordinator and Programme Manager

ASHDEN: SUSTAINABLE SOLUTIONS, BETTER LIVES



Greenway Grameen Infra's CEO Neha Juneja gives her thank you speech after receiving the Ashden International Award 2014 in the Women, Girls and Sustainable Energy category. Photo: Ashden.

By Julia Hawkins, Ashden PR and Digital Media Manager

THE ENERGY ACCESS CHALLENGE

Access to light and power at the flick of a switch is something most of us in the West take so much for granted that it is hard to imagine that not everyone has this luxury. However, nearly one in five people in the world do not have electricity. Approximately one-third of the world's population uses wood, dung or charcoal for cooking, with appalling consequences for their health. Energy poverty, that is living without access to sufficient quantities of high quality, affordable energy sources, is one of the world's greatest challenges and acts as a brake on development. However, despite this, little is known about it in the West – although even here the recent global economic crisis has seen this condition becoming a recognised reality.

The good news is that, around the world, pioneering organisations and enterprises are transforming lives and tackling climate change through sustainable energy. Some are selling solar products and services that brighten up rural lives, some cleaner cookstoves that cook more quickly and emit less harmful smoke. Others are working with communities to install micro-hydro schemes that are bringing electricity to off-grid communities for the first time, or turning organic waste into clean-burning fuel that is healthier for families and helps protect forests.

The inspiring stories from these communities show how, with ingenuity and determination, even the toughest challenges can be overcome. The impact of such work can be seen in improved educational outcomes, better health and increased incomes, as well as cleaner, leaner businesses. However, they need support so that they can grow more quickly and achieve the scale that is needed to end energy poverty for good.

ABOUT ASHDEN

Ashden was set up in 2001 to reward and support sustainable energy pioneers in the UK and across the globe that are transforming lives and helping cut carbon emissions

Our annual Awards ceremony is the highlight of our calendar, where we showcase the most exciting sustainable energy trailblazers of the year. The media coverage that our winners receive helps boost their profile, encouraging others to follow their lead. In our first 14 years, our winners have transformed the lives of more than 37 million people in the UK and the developing world.

Further, Ashden is far more than an awards scheme. Beyond our awards, through our international and UK programmes, we provide tailored support to our winners to help them grow further. The support includes help in developing business plans, general business mentoring, introductions to investors and finance, technical assistance and training in marketing and sales.

FACILITATING PARTNERSHIPS, SPREADING KNOWLEDGE

Through our support programme, we also bring winners together to work with each other – and it is incredible how much synergy can be found through cooperation.



The Sustainable Green Fuel Enterprise (SGFE) is another Ashden International Award winner. Two thirds of SGFE's workforce are women. Photo: Martin Wright/Ashden.

For example, in India we have so many winners – more than 20 – that in 2010 they got together to form their own organisation, the Ashden India Renewable Energy Collective. The Collective acts as a unified voice for some of India’s leading small-scale sustainable energy organisations and encourages the sharing of best practice and lesson-learning among its members.

In the UK, we have also helped the National Trust, a large heritage charity, to establish a knowledge-sharing network among fellow landowning organisations called the Fit for the Future Network. Members of the Network can learn from each other about what works – and what doesn’t – when it comes to investing in energy efficiency and renewable energy.

Through our LESS CO2 programme for sustainable schools, Ashden Award-winning schools mentor other schools in their area on how to save energy and galvanise schoolchildren to take care of the planet.

2014 ASHDEN AWARDS: A FOCUS ON WOMEN AND ENERGY

This year, for the first time, we dedicated one of our international Ashden Awards to recognising the importance of increasing women’s access to clean energy – both as consumers and in the supply and distribution chain.

ENERGIA News’ readers need no persuasion of the fact that women suffer more than men from the lack of access to clean energy: including the negative health effects of cooking on smoky stoves and the risks and physical burden of collecting fuelwood for fires. Not to mention the fact that, in many countries, women carry the greater responsibility for and worry about their families’ welfare. Women also play an important role in the supply chain for energy sources and the associated conversion technologies that contribute to the household income. Ashden wants to recognise these efforts.



Dame Jenni Murray, well known for her long-running BBC radio programme for women in the UK, chaired the Ashden conference: “Fully charged: sustainable energy for women and girls”. Photo: Mike Kemp/Ashden

Prior to the Award ceremony, an international conference: “Fully charged: sustainable energy for women and girls” was held on 20 May. During this conference, the transfor-

mative impact that clean energy can have on the lives of women and girls was explored, as well as the opportunities and challenges faced in delivering sustainable energy to them.

Aside from highlighting the challenges of a lack of access to clean energy, the conference also provided an opportunity to hear from some of the inspirational organisations selected as finalists for the 2014 Ashden Awards. Speakers included Visal Sim of Sustainable Green Fuel Enterprise in Cambodia and Neha Juneja, CEO of the rapidly growing clean cookstoves business Greenway Grameen in India. Greenway Grameen went on to win the Ashden Clean Energy for Women and Girls Award later that week.

The afternoon session was chaired by BBC broadcaster Dame Jenni Murray, well known for her long-running radio programme for women in the UK. Among the panellists, all experts on gender and sustainable energy, were ENERGIA’s Sheila Oparaocha and Richenda van Leeuwen, the UN Foundation’s Executive Director Energy and Climate. The panel discussed the importance of gender and energy in tackling poverty and fostering development, and looked at the economic opportunities provided by energy, how women and girls can be involved in the delivery of clean energy, and the changes in policy, investment and employment that are needed to bring this about.

VOLTS4WOMEN

Given that the issue of women and energy is so important to Ashden, the conference was also an opportunity to spread the word about this issue. To mark the occasion, a mass tweet was organised to create awareness of how women and girls in the developing world bear the brunt of energy poverty. A total of 165 people and organisations joined in, reaching more than 790,000 people.

Those tweeting included leading members of the UK’s Green Party Natalie Bennett and Caroline Lucas (also their only Member of Parliament); Lynne Featherstone, the then Parliamentary Under Secretary of State for International Development; Oxfam GB; the human rights charity Liberty; the UN Foundation and the Global Alliance for Clean Cookstoves.

Discussions at the conference and during the Awards ceremony confirmed that Ashden needs to continue the momentum and take collective action to ensure that energy has a prominent place on the post-2015 development agenda. Ashden needs to advocate an appropriate role for energy in development, and for clean energy for women and girls to be prioritised within this.

Change is certainly in the air. In June, the UN Sustainable Energy for All Initiative declared that the first two years of the 2014 – 2024 Decade for Sustainable Energy for All will focus on women and children’s health. Ashden is looking forward to working closely with both the UK Department for International Development and ENERGIA in helping to realise this.

SMART COOKSTOVES FROM GREENWAY GRAMEEN

International Ashden Award winner: Category Women, Girls and Sustainable Energy



Greenway Grameen Infra's CEO Neha Juneja talking to women's self-help group members. Photo: Martin Wright/Ashden.

Based on a case study developed by Ashden

Despite the rapid economic growth and modernisation of India, cooking practices for many remain unchanged, with households using the fuels and stove types that have been part of everyday life for hundreds of years. According to the 2011 census, over 85% of rural and 65% of urban households continue to cook with biomass fuels – wood, dung and agricultural residues – and often use traditional stoves. This continues to put a burden on women, who inhale health-damaging smoke while cooking and often have to gather the fuel as well.

Neha Juneja and Ankit Mathur are part of modern India: two ambitious youngsters holding engineering degrees and MBAs. Providing better cooking solutions seemed a way to use their technical and business skills to achieve something worthwhile given that, while progress has been made in terms of education, connectivity and in other areas, two-thirds of India still cooks on traditional stoves, causing hundreds of thousands of deaths each year. Their initial research identified a huge potential market. In South India alone, an estimated 28 million households had purchased consumer products such as mobile phones or televisions – which showed they had access to money – but were still cooking on biomass even though an improved stove was considerably cheaper than the electrical purchases.

Juneja and Mathur took on the challenge of reaching the market for improved cooking solutions. They set up a business (Greenway Grameen Infra) to produce wood-burning stoves that are cleaner, efficient, affordable and – crucially – appeal to discerning rural consumers.

PRODUCED FOR CUSTOMER SATISFACTION

From the start, by holding focus groups with women and conducting field trials, Greenway actively sought and responded to user feedback in designing the stove. “We used to package the prototypes properly, in boxes and everything, and test them in stores” says Juneja. “There we would see whether women were interested in buying the stove, or what they would change in order to get a product they would use.” This makes sense in business terms – Greenway needs stoves that sell. There is little point having a technically perfect stove if no-one uses it – which is an all too common story in the cookstoves arena. The design is deliberately a compromise between user requirements and performance.

Higher performance (that is higher efficiency and lower emissions) could have been achieved using a top-loading design, but users wanted a more familiar front-loader. A taller internal chimney would reduce emissions, but it was felt that this would not match cooking styles.

Since low maintenance and simple operation were important considerations, the Smart Stove has no consumable parts. External insulation would improve efficiency, but the added weight would reduce portability.

Initial marketing focused on the ‘worthiness’ of the Smart Stove: saving time, money and the environment. However, Greenway found it was more effective to market the stove as a modern desirable product. For the same reason, they also changed from plain cardboard boxes to attractive colourful packaging.

THE ORGANISATION

Since its foundation in 2010, Greenway Grameen Infra has grown considerably. Currently, Greenway employs 30 people, 19 of whom are field staff, promoting the product, and 11 are office-based. With its manufacturing partner, which produce the stoves based on Juneja and Neha's design, Greenway has indirectly created about 45 additional jobs, and it requires the manufacturer to employ at least 25% female staff on the stove work. This has proved challenging, particularly because of the reticence of women to be pioneers in non-traditional roles. In response, measures to make it more attractive for women to take up these new roles have been implemented, including simple things such as sanitation facilities for women and group hiring, which enables women to support and substitute for each other, especially in sales. Nevertheless, achieving a gender balance remains very challenging. Currently, Greenway employs only one woman in its workforce of 30.

As Juneja observes, "It has been near impossible to recruit women for sales roles, due to difficulty in travel, lack of sanitation facilities, safety and a cultural aversion to sales". Sales started in 2011 and, by March 2014, the business had a turnover of US\$1.6 million and a total of 121,633 Greenway Smart Stoves had been sold. Regular user feedback suggests that nearly all are still in use, bringing benefits to around 610,000 people. Sales are increasing rapidly as the stove becomes well known, and in the January to March 2014 period, the Smart Stove accounted for nearly 40% of total sales.

A HIGH QUALITY PRODUCT AND ITS MARKETING

Greenway develops its efficient wood-burning cooking stoves through continuously listening to feedback from users.

The stove is based on the rocket design principle. This involves a 'chimney' within the stove that directs air from the base through the burning wood and encourages the mixing of gases and flames above it. Precise dimensions are needed to achieve efficient burning and, with this, low pollutant emissions, and to transfer the heat efficiently to the cooking pot.

Greenway decided to manufacture the stove in a factory in the Punjab rather than in China, where production might have been cheaper, to enable oversight of the production quality and to give it the ability to adapt details. The stoves are actively promoted in South and Central India, mainly in Kerala, Karnataka and Maharashtra, and are also sold in other parts of the country. Sales are through established distribution channels, including microfinance institutions (MFIs), retailers and NGOs.

The maximum retail price of the Smart Stove is 1,399 INR (US\$23). This price is printed on the packaging so that customers cannot be overcharged. The stove is promoted by Greenway demonstrators who work on a regional basis, attending local fairs and markets. Flyers are provided for retailers, and demonstrations made outside retail shops. Many sales are through MFIs who market through their networks, sometimes assisted by Greenway

staff. Mass media, such as regional newspapers, are also used, although advertising on TV, which would have an enormous impact, is very costly and beyond Greenway Grameen's budget. Winning the Ashden Award has been very important for the organisation, and its prize of £20,000 will predominantly be invested in marketing.

To date, over two-thirds of the sales have been through partnerships, in particular with MFIs, which enable end-users to buy a stove through a microfinance loan, typically spreading payments over six months. Other sales are to businesses (sometimes for CSR programmes), NGOs, retail outlets and government programmes. No subsidies are provided.

The Smart Stove needs no aftersales service, and a one-year warranty is provided for manufacturing or transportation related defects. On the basis of accelerated testing, the stove is expected to last for five years in regular use. Sales started four years ago, and there have been very few returns or complaints, so the predicted lifetime seems realistic. A serial number is printed on both the stove and the packaging, so that production can be traced if problems occur.

BENEFITS TO USERS

Greenway partner Grameen Koota carried out a formal survey of 278 users who had changed from mud stoves to Smart Stoves and found high levels of user satisfaction. A very high percentage (94%) of the users indicated that they were 'satisfied' or 'very satisfied' with the smart stove. The remaining 6% were 'somewhat satisfied'. All the respondents thought the stove saved at least 25% fuel. The most frequent reasons given for liking the Smart Stove were: it is easier to light than a mud stove; it cooks faster;



Greenway Grameen Infra employee demonstrates how the Smart Cook-stove works. Photo: Martin Wright/Ashden.

it blows out less often; and is portable and can be carried indoors when it rains.

Informal feedback by users to Greenway staff supports the survey's findings. Staff report that the Smart Stove meets nearly all a household's cooking needs, and a mud stove is only used for very large meals. The convenience and time saving are highly valued: the Smart Stove needs less attention and time spent cooking is reduced by about 30 minutes a day. The improved cleanliness is rated highly by the women who appreciate that their skin and hair feel cleaner, and that their kitchens and cooking pots need less cleaning. Health benefits including less itchy throats and fewer sore eyes are apparent to users while the likely increase in life expectancy due to reduced smoke inhalation is less obvious.

In many households, fuelwood is collected primarily by women and girls, and the Smart Stove's efficiency saves them two or three hours of this laborious work each week. For such households, it is this coupled with the health aspects and the aspirational component that are important in the purchase decision. Some households buy wood, paying typically US\$0.08 per kg, meaning that switching to a smart stove can save around US\$90 per year. This is a significant amount since household income is typically only US\$1500 per year, and the purchase price of the stove is recovered through savings within 14 weeks.

Some owners of gas (LPG) stoves buy smart stoves to save money since the government allocation of subsidised LPG is insufficient for all their cooking needs. Here, the different stoves suit different tasks: the LPG stove can be used to boil water quickly for morning tea, with the Smart Stove used for longer cooking tasks.

ENVIRONMENTAL BENEFITS

The Smart Stove meets the Bureau of Indian Standards (BIS) standards for efficiency and emissions. Testing and

user feedback suggest that the Smart Stove cuts wood use from an average of 7.2 to 4.2 kg/day (a 38% drop), thus saving 1.1 tonnes per year per household. Given the number of stoves in use, the savings amount to about 130,000 tonnes annually. This is especially relevant since there is huge pressure on wood resources in the Western Ghats, where most stoves are sold. The Indian Ministry of Energy and Fuel estimates that 73% of the wood used comes from non-renewable sources (so leading to deforestation) so it is estimated that Smart Stoves are saving about 97,000 tonnes each year of non-renewable wood.

As such, the stoves also potentially cut greenhouse gas emissions by an estimated 1.67 tonnes CO₂ per year per stove (CDM methodology), a total of 200,000 tonnes a year. On top of this, there are reductions in non-CO₂ greenhouse gases and particulates including black carbon. While this reduction in emissions is small compared to India's total CO₂ output, every little helps.

THE FUTURE

The potential market for improved stoves in India is enormous. Greenway wants to be a leader in the sector, and is investing in marketing and advertising to enhance their already strong growth. New products are also under development. A larger version of the Smart Stove has been developed in response to user demand from large households and small eateries. This stove was launched in June 2014 and already has BIS approval. A stove that is also able to generate electricity, the Greenway Power Stove, is currently being piloted and has so far been a big success, especially with men because of it being able to charge smartphones.

"I hope that cooking on clean stoves becomes standard in houses, that every kitchen has a built-in place for a clean cookstove" says Juneja, dreaming about the future, and "that our Greenway Smart Stove becomes the brand of choice in India, a respected brand."

GREENWAY GRAMEEN'S SMART STOVE

The Smart stove is about 300 mm tall with a diameter of 200 mm. The top of the stove is deliberately made to look like an LPG stove and can safely be used with pots up to 360 mm diameter. A special feature of the Greenway design (patent pending) is that the stove's internal body has a double shell. The outer shell is conical in form, so that a tapering gap is created between the two shells. The inner shell has perforations so that the hot air rising through the gap is forced into the burning gases, providing secondary air and improving combustion.

The stove is made of metal for durability, and dies are used to produce metal parts to precise dimensions. Stainless steel is used for all parts in contact with the flame (grate, inner shell, top and pot-stands) and mild steel for the other parts. Exposed parts are coated with heat-resistant paint to minimise corrosion, and insulated handles mean that the stove can be moved around safely even when hot.



Greenway Grameen Infra's Smart Stove
Photo: Martin Wright/Ashden.

SAKHI UNIQUE RURAL ENTERPRISE (SURE)

Runner up for the International Ashden Award, Category Women, Girls and Sustainable Energy



Sakhi with the biogas plant installed in her house. Photo: SURE.

By Swarnima Tamang, Project Manager, Swayam Shikshan Prayog (SSP)

Sakhi Unique Rural Enterprise (SURE) is an associated business of Swayam Shikshan Prayog (SSP), a training and development grassroots organisation, based in and working across 13 districts in four states of India – Maharashtra, Bihar, Gujarat and Tamil Nadu. It was jointly initiated by SSP and BP Energy to prototype a clean fuel cook-stove. It was registered in 2009 as a formal entity ‘Sakhi Retail Private Limited’ and renamed SURE in 2013.

SURE promotes the use of clean energy products and solutions through building the entrepreneurial capacity of a women’s network that delivers and services such solutions for those people who are part of the poorest socio-economic group sometimes known as the Bottom of the Pyramid (BOP). Rural women entrepreneurs are encouraged to undertake micro-businesses, and are provided with training, technical support and access to technology, finance and markets. These women (Sakhis) are able to interact effectively with potential customers because of their social acceptability in the community as “one of their own.”

The journey of creating Sakhis started almost two decades earlier, after the Latur Earthquake in Maharashtra, when SSP initiated rehabilitation building and construction activities through women self-help groups (SHGs) and provided masonry and community development training to SHG leaders. Over the years, the grassroots women leaders approached SSP seeking entrepreneurship skills as they wished to economically empower themselves

further so as to make a difference to their households and communities at large. This capacity to build women’s entrepreneurial skills is one of the reasons BP Energy approached SSP and that SURE was born. Following the larger mission of empowering women, SURE started building women’s capacities and provided opportunities to be a part of the women-led last mile network.

THE ISSUES AT STAKE

The majority of the rural population still use traditional fuels - most often firewood, dry agriculture waste and dung cakes - for heating and cooking purposes as these are available locally at zero financial cost. Within households, women are the most involved, spending many hours daily in smoke-filled kitchens and in collecting wood. Exposure to smoke from the simple act of cooking causes four million premature deaths each year, and is estimated to be the fourth highest risk factor for disease in developing countries according to The Global Burden of Disease Study 2010.

In rural areas of India, 80% of the health problems faced are due to waterborne diseases with high levels of pollution in drinking water originating from various sources including sewage, urban run-off, industrial wastewater and chemicals used in the water treatment process. Many other diseases also spread due to open defecation, still common in rural areas. Hence, there is an urgent need for toilet facilities. Modern solutions such as individual water filters and bottled drinking water are unaffordable for most people, who are then forced to use the nearest and

cheapest source of water: frequently contaminated ponds and streams.

It is often the women of households who, through their higher levels of exposure linked to their gender roles of providing the household's energy and water needs, are most vulnerable to the harmful effects related to energy and water use. SURE aims to empower and involve women by providing skills and organising network platforms to achieve sustainable livelihoods and incomes while promoting community development.

SURE's mission is to enable social change and economic empowerment by developing and strengthening competencies of grassroots women as leaders and entrepreneurs. SURE focuses on building entrepreneurial capacities and providing livelihood opportunities through rural marketing networks that reach the Bottom of the Pyramid.

WHAT SURE BELIEVES

SURE believes that, if rural women are equipped and empowered with entrepreneurship education and eco-friendly merchandise, they will achieve higher and sustainable incomes. Clean cooking and lighting solutions provided by SURE enable women to bring additional income to their families.

These technologies also have a positive impact on the environment and community members, especially other women. The use of clean-fuel cookstoves has reduced indoor air pollution, lowering health risks and the onset of respiratory illnesses for families, and especially for women and children. As a result, women participate in village development and girls have a higher enrolment ratio in the schools as they no longer have to spend long hours searching for cooking and lighting fuels.

Sakhis actively propagate awareness of clean energy and the adoption of solutions in the villages through conducting various community meetings, women's self-help group meetings and other gatherings of women and adolescent girls. Women and girls are encouraged to participate in such meetings since, with increased participation, one sees a growth in the school enrolment ratio of girls and village development initiatives involving women.

WAYS OF OPERATING

Through a rural-to-rural product value chain, rural women entrepreneurs undertake the marketing of clean energy solutions to those at the BOP, thereby reducing distribution costs and streamlining rural supply chains. A one-third increase in the income of the Sakhis has been recorded through product sales. Products include solar lanterns, clean (smokeless) cookstoves and biomass fuel, water purifiers, solar home lighting systems, solar water heaters, biogas, prefabricated toilets and sanitary napkins.

The products are procured largely through partnerships with communities, other organisations and companies such as First Energy, d.Light, Kirloskar, Eureka Forbes and LSS Solar. SURE procures clean energy solutions

and products from manufacturers and sells them on to women entrepreneurs who retail these products in their villages at a discounted rate while retaining a profit margin. Through providing socially relevant products and services where they are least accessible, SURE contributes to improved rural health.

SURE empowers women in rural areas through building capacity and skills, and provides handholding and business support through access to technology, markets and finance. This facilitates them in developing business activities surrounding clean energy, health and sanitation. This approach involves communities in providing for their own welfare and ensuring sustainability through a business perspective.

In brief, improved access to clean cooking and lighting solutions such as smokeless cookstoves, biomass pellets, biogas, solar lamps and other socially relevant solutions is provided at affordable prices through an effective network. As part of this, SURE has built longstanding strategic partnerships with leading companies in the sector for prototyping and producing clean and green products with active participation and inputs from its rural women entrepreneur network.

BENEFITS FOR WOMEN; BENEFITS FOR COMMUNITIES

The empowerment journey of a Sakhi, a woman entrepreneur, starts with a ten-day entrepreneurship training course that focuses on entrepreneurship, knowledge of clean energy, market information, aftersales service and more.

Working with women in the rural areas is challenging because of the existing gender stereotypes and social constraints that restrict women's economic and social mobility. Given SSP's mission and the support of SURE, women are able to overcome these hurdles; they step out from their vulnerable and exploited situations and emerge as successful entrepreneurs and community leaders.

Through SURE, women entrepreneurs are not only engaged as a part of the rural distribution network, they also actively participate in improving the system. They discuss the needs of their community, provide feedback on the product design, the quality of the product and provide ideas on affordable pricing for new product lines.

Sakhis share the ways in which they have been able to establish and expand their businesses and earn additional sources of sustainable income with their families. They have received much appreciation within the family, and gained respect and a higher status in the community for their contribution to village life.

Communities gain from increased accessibility to much needed solutions, by switching to affordable energy-efficient products.

LET THERE BE LIGHT

One woman's mission to bring clean energy to Tanzania¹



Erica Mackey, COO and co-founder of Off.Grid:Electric
Photo: Anne Wheldon/Ashden..

By Julia Hawkins, Ashden PR and Digital Media Manager

In Tanzania, 85% of the population lack access to electricity, and more people have access to mobile phones than have mains electricity in their homes. These two data inspired a young British woman (Erica Mackey) and her two American business partners (Xavier Helgesen and Joshua Pierce) in 2011 to found their company Off.Grid:Electric. In partnership with Forsera, a German solar company, they developed small solar-home-systems; their M-POWER systems. The devices are installed in households and the customers pay for the service provided using their mobile phones.

With an initial startup cost of TZS10,000 - 15,000 (US\$6 - 9), and a daily fee between TZS 300 and 1,000 (US\$0.18 and 0.63), the service is not only affordable but the payment method extremely flexible. Customers lacking reliable incomes can pay one day at a time, and can even miss the odd payment without getting slapped with a pen-

alty fee such as other providers charge. This is a welcome provision since upfront connection costs, user fees and fines can be major barriers to rural households. Once a payment has been made, the customer receives a code on their cell phone that will activate their solar system. For people without a mobile phone, there is the local mobile money kiosk.

Currently, over 10,000 households are already using Off.Grid:Electric's services.

Julia Hawkins, Ashden's PR and Digital Media Manager, held a conversation with Erica Mackey, COO of Off.Grid:Electric about her experiences with running the company.

Why did you decide to get involved in this field – was there any particular deciding moment?

It was a collection of moments really. I was working in public health in Tanzania, focused on bridging the gap between the free urban health services provided by the government and the rural poor who needed those services. I spent a lot of time thinking about how to deliver services to the last mile, and what the people's needs are.

When I was doing that job, I frequently spoke to community members about what was at the top of their list of their desires – and I always heard the same message: access to energy. People were getting sick just because they were living in homes with kerosene lamps and this was obviously something that really concerned families.

How do women experience the energy access gap?

Women are the ones that sit around the kerosene lanterns and breathe in cooking smoke. Sitting at home with a kerosene lantern has the same negative health impacts as smoking two packets of cigarettes a day. Women are simply more exposed to dirty energy in their homes than men. Then there is a second issue, which is the worry factor. Women take on the burden of worrying about their families' health, with their kids studying at night by the light of the kerosene lanterns so they are also inhaling the fumes.

What does it mean to you to be a woman working in this field?

I have spent my whole career trying to deliver services to people who most need them. I'm motivated by the fact that I am able to focus my own energies on making a contribution to trying to solve the energy access gap for the 1.6bn people in the world who are living off-grid. What makes me upset is that the world's poorest people spend the most on the dirtiest energy forms. This seems incredibly unfair. It is really important for me to try to do something about that.

When people ask me about being a woman in this field, it helps to put my gender in context. I am a relatively young,

¹This article is based on one first published on Ashden's website: <http://www.ashden.org/blog/let-there-be-light-one-womans-mission-bring-clean-energy-tanzania> and is published with their kind permission.

non-African, woman building a high-growth company in an African culture that values age and in a sector that is dominated by men. So being a woman is just a piece of the bigger picture, which is part of what makes my job so interesting and energising.

Why are there not more women involved in clean energy?

Internationally, yes, women are under-represented in clean energy access, but it's changing. On a day-to-day basis, I see the representation of women working in our sector growing.

There is a variety of skills required to work in this field. It is not necessarily just about technical skills – not that women aren't great engineers or software developers – there are so many other aspects of business and field execution that are involved in energy access. We need people with the full gamut of skills: customer service specialists, logistics and operational specialists and so on. I think you will start to see more and more women involved in the sector as the sector itself begins to develop.

What about Tanzanian women – is selling solar services generally seen as an 'acceptable' job for a woman?

Well the first thing to say is that over half of our team are women so, if it isn't acceptable, we have a lot of rebels at Off.Grid:Electric. I think gender dynamics play a significant role in shaping our company culture in Tanzania.

On the village distribution side, being an M-POWER agent is an unusual job, and there is clearly a connotation that installation, construction or electrical work is a man's job. However, a range of skills is required to be an M-POWER agent – we need great communicators, great installers and great service-oriented people. We see women excel in all of these roles.

What is your advice for other women trying to get into this field?

I think my best piece of advice would be to just get out there and do it. This field is growing so quickly that I think you just need to jump in and get your hands dirty.

It is quite daunting when you think about the scale of the challenge involved. If you are trying to start a business, it is essential to get as close as you can to your customer base and build a solid team. In my own business, I have surrounded myself with a diverse team that is better than me at almost everything. I love this environment, it pushes me to grow and to think differently every day.

What is your vision for the future?

Our goal at Off.Grid:Electric is to light Africa with clean electricity within the next decade. I really believe it is possible to create a world where everyone has access to clean energy and where cost is not a barrier. We are at a point in time where all the pieces – technology, finance and business models - are ready to fall into place.



For the sales team of Off.Grid:Electric it's not only about selling solar-home-systems. They also provide customer service and maintenance. Photo: Anne Wheldon/Ashden.

FROM SHELL TO STOVE:

Char-Briquettes from Coconut Shells an Environmentally Friendly Hit with Cooks



Carlo Figà Talamanca, CEO of The Sustainable Green Fuel Enterprise. Photo: Martin Wright/Ashden.

Cambodia and its economy depend heavily on wood and it is one of the countries most suffering from deforestation. Around 80% of the population use wood or charcoal as their main domestic energy source, and they are also important fuels for industry. The Sustainable Green Fuel Enterprise (SGFE) is a social enterprise that produces high-quality char-briquettes from waste biomass materials such as coconut shells. Production started in 2009 but, after two years, the organisation was still struggling with the start-up phase. Carlo Figà Talamanca took SGFE over in 2012, launching the business into a massive spurt of growth. Within a year, SGFE had 24 employees and a revenue of US\$165,000.

When it comes to the workforce, SGFE is making a conscious effort to include women: one-third of the management and factory staff are women. Further, a condition of employment is that all workers' children remain in school. This safeguards the quality of education (and later on of life as well) for many girls who normally would not have the opportunity to go to school.

ENERGIA held a conversation with Carlo Figà Talamanca to explore SGFE's gender policies and their impact on the lives of women.

Does your organisation have a specific policy or objectives in respect of equality between women and men? Does this relate to your employment policy?

We have policies that by Cambodian standards are very good. For example, we offer maternity leave, wedding leave and health insurance. We also have a policy that

finishes rude behaviour. This was inspired by a woman who was not treated well. I want everybody to be treated well and to respect others. In that sense, SGFE is a good environment for women to work. Currently, we have 24 employees, 8 women and 16 men. That is not bad for a charcoal factory where there is a lot of physically hard work.

On the management side, we have two women and two men. The supply manager and the production manager are men. These are typically male jobs and, culturally, women are not expected to do such jobs so, for example, it's hard to find a female mechanical engineer. However, I would like all 24 employees to be women: in my experience they are more reliable, more responsible, they work harder and they don't come to work drunk.

Is it more challenging to recruit women for technical positions than men?

Yes it is, because women do less of this type of work in Cambodia. It's a cultural thing. Women are not supposed to do certain jobs. For example, I have a female employee who previously worked in the French Chamber of Commerce as a receptionist: an air-conditioned environment, five days a week, lots of free time. However, she wanted to do more, something for the environment and something for the Cambodian people, so she came to us - a loud, dirty, hot factory where she works six days a week. Now that's not a common thing for a Cambodian girl to do.

Wishing to recruit more women, are there specific actions you intend to take in order to achieve this objective?

We are currently trying to buy some material-handling equipment such as cranes. That will be beneficial for everyone, men and women. It will make the work less hard. If we manage to get some of that sort of equipment, then maybe we can recruit more women.

Do you find there is a difference in the way customers respond to a male or a female sales agent?

In sales, I do not think it makes a lot of difference, although it seems that women customers prefer to talk to a woman than to a man. We sell to restaurants and shops. Fifty percent of the restaurants and ninety percent of the shops are owned by women. We had one female and one male sales agent, and the woman was better. She was smarter, not only in terms of sales but also technically.

In general, it depends on the product being sold. With more technical products, solar lamps for example, customers would listen more to a man. In the case of household products and charcoal, a woman is better. Fuel is mainly bought by women, they use it and it is not an investment. If it concerned an investment, a stove for instance, the husband and wife would make the decision together. Here in

Cambodia they say, the man is the head of the family but the woman is the neck - and without the neck, the head falls off.

Do you find that recruiting women results in them serving as a role model for the local community? If yes, in what ways? Does it also have negative effects?

Our employees come from very poor families. They all come from a community of waste pickers on a dumping site. We pay them above the minimum factory wage and they get insurance, paid vacation, a thirteenth salary month. So people are happy with their jobs. For the work they do, they are highly respected.

However, we see impacts when we educate women – and men, but with women they are larger – for example, it becomes harder for them to marry. They come from poor circles, and this is not just financial poverty. When they get education, they are somehow in the middle, because they are not middle class either. This is especially hard for women. What we see at PSE [Pour un Sourire d'Enfant - a French NGO that provides schooling and vocational training to children and young adults] is that former students tend to marry each other.

How do your final products/services help women and men improve their livelihoods and lives?

Let me give you an example. The cook at the place where we have lunch every day, she really likes our briquettes. She loves the fact that the kitchen is no longer so black, her pots aren't black anymore either, and she no longer gets holes in her shirts. This is something that other customers have told me as well. The business can even save money because the char-briquettes last longer. A street-food vendor told me that he produces twice as much for less money because he can move the char-briquettes around without them breaking. He was able to save so much that he could buy a bike!

In what way does your company empower women with knowledge or tools to improve the quality of their lives?

We expect our workers' children to go to school. A while ago, one of our workers sent her daughter to come in her place, because she couldn't come that day. However, this girl was too young and the factory work was too hard, so I didn't want her to do that work. Instead, I gave her a vacation job, working in the office three times a week. She really liked it and it provided an example of how important education is, to show that, if you go to school, you can climb the ladder. Now this thirteen-year-old girl is starting school again - at the PSE.

In 2014, apart from the Ashden award, SGFE also won a grant from the Global Alliance on Clean Cookstoves' Spark Fund. With the prize money, SGFE is able to work together with a gender consultant to have a gender value assessment and then create an action plan to improve the impact.



Sorting the Shells at The Sustainable Green Fuel Enterprise.
Photo: Martin Wright/Ashden.

NEWS FROM THE SECRETARIAT

Greetings!

Quite some time has passed since the last issue of ENERGIA News in 2011, and quite some changes have taken place. In this section, we will update you on our programme and activities for Phase 5, which runs from 2014 – 2017. Some people have left our International Secretariat (IS), and others have joined our team. This latest edition of ENERGIA News gives us the opportunity to present ourselves in our current setting.

THE ONES WHO LEFT THE INTERNATIONAL SECRETARIAT



ANA ROJAS

After almost nine years, Ana decided it was time to move on. She left ENERGIA in July 2013. Happily, the good-byes were not final, Ana is currently an independent consultant in Gender, Energy and Sustainable Development and, in this capacity, she coordinates advocacy efforts for ENERGIA and IUCN in a Hivos-funded project that aims at mainstreaming gender in the SE4ALL regional agenda in Latin America. Ana has also supported ENERGIA's strategic collaboration with SNV in developing gender tools for their ICS Programmes.



ANJA PANJWANI

Anja left ENERGIA in July 2013. For many years she was the Africa Programme Officer, involved in Monitoring and Evaluation and Gender Mainstreaming projects amongst others. Anja has moved on to be an independent consultant in Energy, Poverty and Gender and is now a programme Officer at Hivos.

THE ONES WHO STAYED



SHEILA OPARAOCHA

Sheila remains ENERGIA's international coordinator and programme manager. Starting its fifth phase, ENERGIA's International Secretariat manages three large programmes (a programme on Women's Economic Empowerment, a research programme and an advocacy and policy influencing programme), several smaller ones as well as a number of consultancies. Sheila oversees it all.



SOMA DUTTA

Up to the end of Phase 4, Soma was ENERGIA's Regional Network Coordinator in Asia. With the start of Phase 5, Soma is now Programme Coordinator for ENERGIA's Women's Economic Empowerment programme.

THE NEW ONES



MAURITS VAN TONGEREN

Programme Assistant

Maurits has been working at ETC, ENERGIA's host organisation, since 2009 where he was portfolio manager

for the health unit, which focussed on Performance-Based Finance and HIV/Aids. He joined the ENERGIA team in 2013 as programme assistant, providing administrative and secretarial support to the network's international programmes. His experience includes contract management; supporting procurement and partner assessment; supporting monitoring, progress and financial reporting; supporting partner relationships; designing and updating management information; documenting and maintaining databases/archives. Maurits holds a Bachelor's degree in International Tourism Management and a Master's degree in Cultural Anthropology.

book "The Power to Produce: the role of energy in poverty reduction through small scale enterprises in the Indian Himalayas". Her areas of research include the sustainability of biomass, biofuels, renewable energy and energy access and the diffusion of innovations.



HUUB KWANTES

Programme Assistant

Huub has worked with ETC since 2010, supporting the Dutch Rural Network as programme assistant. In this capacity, he managed various rural development and sustainable farming projects; organised meetings and conferences; developed and implemented basic social media training for small-scale entrepreneurs and worked on identifying and communicating best practices. In February this year, Huub joined the ENERGIA IS team. He will give overall support to the Gender and Energy Research Programme's management and will be involved in developing and implementing an M&E system as well as a communication and dissemination strategy for the programme. Huub holds a Bachelor's degree in Cultural Anthropology and a Master's degree in European Studies.



RAND AL-SHAAMA

Financial Officer

With her twenty years of experience in financial management, Rand is a key member of the ENERGIA team. She has experience in budget development and the management of international programmes; financial monitoring and reporting, supporting procurement and assessing the financial soundness of partner organisations; monitoring and controlling budget use in subcontracts; assessing invoices, maintaining financial records and book keeping; supporting external financial audits; and designing and maintaining financial management information, record and archives.



TJARDA MULLER

Communications Coordinator

Tjarda joined ENERGIA's International Secretariat in November 2013, and is primarily responsible for strategic communications in ENERGIA's international programmes. She has 15 years working experience in communication and development cooperation, including managing and implementing gender responsive communications strategies; developing and managing the production of communications materials; organising and managing press conferences and campaigns; documenting gender results and lessons from development programmes; capacity building and mentoring partners. Tjarda has worked in the Netherlands, El Salvador, Nicaragua and Mexico. She holds a Bachelor's degree in Spanish Language and Culture and a Master's degree in International Organisations.



ANNEMARIJE KOOIJMAN

Research Programme Coordinator

After having worked for over ten years at the University of Twente and holding several positions, the last of which was as senior researcher, coordinator of research project development and strategic advisor, Annemarije joined to strengthen our International Secretariat in August 2014. Annemarije has a Master's degree in Mechanical Engineering and a PhD in Energy, diffusion of technology and small enterprises, based on which she has published the



ADINDA VELTROP

Communications Assistant

Adinda joined the team in June 2014. She will support the IS until the end of May 2015 as a communications assistant, translating strategies and ideas into concrete products. The design of this ENERGIA News issue is an example. Adinda holds a degree in International Communication and Media and a Bachelor's degree in Gender & Ethnicity Studies. She has previously worked for several international NGOs and non-profit organisations, combining her research background with communications.

ENERGIA PHASE 5

ENERGIA is now in its fifth phase. During the first four phases of our network's life, spanning 1996 – 2013, we focussed on bringing the network together, implementing gender audits in government institutions, building capacity of energy practitioners to work with gender approaches, influencing policy and advocacy, as well as on mainstreaming gender in energy projects and programmes. ENERGIA has emerged as a leading international network of like-minded organisations and individuals with a unique niche and a firm commitment to gender equality, sustainable development, poverty reduction, women's empowerment and energy access. Our activities have contributed to raising consciousness on the topic and piloting innovative approaches to gender mainstreaming. In starting our fifth phase, we felt it was time to shift our focus somewhat and have, at the core of our attention and activities, the frontier of energy access: women and men in poor rural and remote communities who lack access to energy services and therefore face harsh, sometimes life-threatening, challenges.

OUR PROJECTS FOCUS ON FOUR AREAS:

WOMEN'S ECONOMIC EMPOWERMENT

In developing countries, women play vital roles for their households as energy producers and as the managers of energy security. Despite this, relative to men, they have less access to productive assets such as land and technology, and to services such as finance and energy access. In line with its commitment to the UN initiative Sustainable

Energy for All (SE4All), ENERGIA focuses on empowering women in the overall energy value chain from energy generation through to its end uses. Through country programmes in Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda, women-led micro- and small enterprises (MSEs) receive business development, technical, financial and leadership training and mentoring, as well as other necessary support.

The programmes aim at building sustainable businesses that deliver energy services to 2,000,000 consumers, as well as strengthening over 3,000 women-led MSEs through energy access and more efficient use of energy in their income-generating activities.

In December the programme partners, ENERGIA's International Secretariat and its Advisory Group came together for its first face-to-face meeting. The programmes are now fully shaped and off the ground. We will publish features, updates and activities on our website: www.energia.org, Facebook and Twitter.

RESEARCH

Our new five-year Gender and Energy Research Programme, which runs from 2014 to 2019, aims to provide an evidence base for improving energy investment effectiveness through understanding and better addressing women's specific needs for modern energy services through empirical research.

There are many processes in the energy sector and elsewhere in the economy that have an impact on energy access, including power-sector reform, tariff policy and the removal of subsidies; policies to address climate change; the promotion of energy efficiency and efforts to encourage private-sector financing of energy-related infrastructure. For these to be effective, it is necessary to understand how these processes will affect women's and men's access to modern energy services. ENERGIA believes that empirical research can have a strong influence on policymaking, and that having a substantial, reliable and informed body of evidence helps formulate effective interventions.

The research will be carried out by research institutes, and we are currently in the process of selecting and contracting consortia. The ENERGIA International Secretariat will be in charge of the day-to-day management of the programme, supported by a Principal Investigator and a Technical Advisory Group (TAG), consisting of independent researchers and consultants, as well as high level experts from DFID, the World Bank and the Global Facilitation Team of Sustainable Energy for All Initiative. The TAG will come together twice a year to discuss progress and relevance, and will offer guidance to the programme management. The first TAG meeting took place in mid-July, to achieve a common basis for this programme and further shape its design. Based on an open call, fifteen organisations were selected based on their expressions of interest to develop

full proposals spread across the five themes. From these fifteen, one per theme will be selected to implement their proposal. Their research will begin in January 2015.

Follow the programme on www.research.energia.org

POLICY INFLUENCING

As a member of the SE4All Advisory Board, ENERGIA safeguards the inclusion of gender objectives in SE4All policy, programming and implementation, on the global as well as the national level.

On the national level, country programmes aim to develop and implement advocacy and communications strategies to ensure the inclusion of gender objectives in SE4All country action planning processes and investment prospectuses and to implement national campaigns on scaling up energy access through women's economic empowerment.

Through participation in high-level SE4All meetings, and showcasing evidence and good practices, national-level findings will trickle up to the global level.

On the global level, ENERGIA plays a key role in bringing like-minded organisations together, thus strengthening CSO participation and influencing in SE4All policy and planning.

KNOWLEDGE SHARING

Over the past two decades of its existence, ENERGIA has published a wide range of materials, from brochures and magazines to training manuals and books, on the gender and energy nexus. In our fifth phase, we will continue producing and disseminating case studies, best practices and other knowledge materials, thus fostering learning and exchange between like-minded organisations and professionals, as well as enhancing knowledge and raising awareness amongst non-traditional allies, partners and institutions, including the private sector.

Over the coming years, ENERGIA will be able to implement the abovementioned programmes, projects and activities thanks to funding from the Swedish International Development Cooperation Agency (SIDA), the Norwegian Agency for Development Cooperation (NORAD), the Ministry of Foreign Affairs of Finland, the UK Department for International Development (DFID), the Ministry of Foreign Affairs of the Netherlands, and the Dutch international development organisation Hivos

We are excited about our new programme. We will keep you updated about our achievements and activities; about forthcoming events, publications and other interesting news through our website, newsletter, Facebook and Twitter. Read us, like us, share us!

ENERGIA's Phase 5 Programme is supported by:



WOMEN'S ECONOMIC EMPOWERMENT



Vinsensia Lanas sells clean energy technologies from her Tech Kiosk in Ruteng, on the Indonesian island of Flores, in East Nusa Tenggara province. Photo: Monica Christy Wibawa/Kopernik.

In developing countries, women play a vital role as energy producers and managers of energy security for the household. Yet, relative to men, they have less access to productive assets such as land and technology, and to services such as finance and energy.

In line with its commitment to the UN Sustainable Energy for All (SE4All) initiative, ENERGIA is focusing on empowering women in the overall value chain from energy generation through to its end uses.

Since ENERGIA's establishment in 1996, the International Network on Gender and Sustainable Energy has contributed substantially to raising awareness on gender mainstreaming and to piloting innovative approaches on the topic. From 2014 to 2017, ENERGIA's Women's Economic Empowerment programme (WEE) will support partner organisations based in Africa and Asia in empowering women entrepreneurs to scale up the delivery of energy services to over 2,000,000 consumers and to integrate a gender approach in Sustainable Energy for All (SE4All) policy design and programme implementation at the global and national levels.

After receiving many submissions for our WEE Programme, ENERGIA has selected five partner organisations which we will support over the course of three years. Together, we will empower 3,000 women entrepreneurs in the delivery of energy services, reaching over 2,000,000 consumers in Asia and Africa.

Aside from supporting and strengthening women-led micro- and small enterprises delivering energy services to end-users, our programme partners will actively engage with SE4All national action planning and investment prospectus processes to include gender objectives. This will be done through targeted advocacy strategies and showcasing the impact of women-led enterprises in delivering energy access for all.

In 2014, we visited all our partners to meet the teams on the ground and experience first-hand how women-led enterprises and groups are making a difference in their communities. We are proud to present our five partners to you.

GVEP INTERNATIONAL – SENEGAL

Global Village Energy Partnership (GVEP) and its partner Social & Ecological Management Fund (SEM Fund) have formed a strong team to support women's economic empowerment in Senegal's energy access market. Through their WEE project, "Energy opportunities for women in Senegal" they will support the growth of 250 women MSEs through business and technology mentoring for each woman entrepreneur, providing them with access to knowledge, local markets and finance. Access to electricity is as low as 4% in some of the targeted rural areas in the regions of Tambacounda and Kedougou in Senegal, where poverty and unemployment rates are high, and 89% of households still use firewood for cooking.

Increasing energy access offers economic opportunities for women, both through selling energy products and services and through productive uses linked to crop processing. There is a good potential for agricultural crop and processing activities. These account for most of the activities of the 1,300 women that SEM is already working with in the target regions, where the crops processed include rice, sorghum, millet, maize, cotton, baobab fruit and honey. Increasing energy access offers economic opportunities for women, both via the sale of energy products and services through productive uses applied to crop processing. However, there are several factors that are impeding progress, including the limited awareness and limited availability of products, lack of business and technical expertise and limited access to capital, all of which will be addressed by the WEE project. Addressing these barriers to women-owned/managed SME growth requires more than just capacity building. It requires a systematic, integrated and multi-year approach to improving women's position in the energy market "ecosystem".

GVEP International aims to have improved access to energy for over 400,000 women, men and children in rural



WHERE?

Rural areas in the Tambacounda and Kedougou regions of Senegal

WHAT?

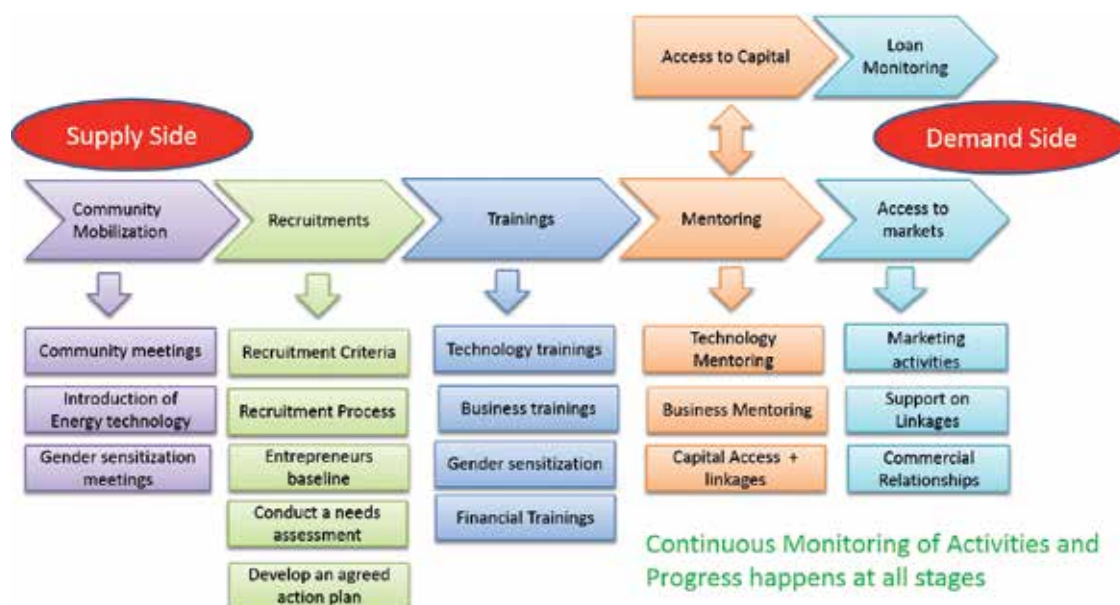
Solar lanterns, improved cookstoves, briquettes

PROPOSED PROJECT TARGETS:

250 small-scale women entrepreneurs

400,000 end-users

areas by the end of the three-year project. The mentoring programmes will ensure that the MSEs are commercially viable in a functioning market and that the specific challenges facing women will be addressed. Through this assistance, women's participation across the energy value chain will be raised and there will be improved household access to sustainable energy across the regions. The cultural barriers to women's participation in the energy value chain will be addressed at the community level.



KOPERNIK SOLUTIONS - INDONESIA

In eastern Indonesia, 82% of the rural population rely on biomass as their primary cooking fuel with many people also relying on kerosene for lighting. The majority of the population lack access to clean water, with reports concluding that Indonesia has the worst drinking water in Southeast Asia.



To address these issues, Kopernik is offering a proven women's empowerment model and last-mile distribution system in Indonesia that provides women with entrepreneurship training and leverages existing independent shops to deliver quality products. In its approach to empowerment and distribution, Kopernik builds sustainable mechanisms for energy and water access while keeping costs low through streamlining the logistics of distribution. Since 2010, Kopernik has reached more than 220,000 people – half of them women and girls – through connecting poor communities living in the 'last mile' to simple, life-changing technologies.

Through the project "Scaling up Energy Access through Women's Economic Empowerment", with the support of ENERGIA's WEE Programme, Kopernik aims to engage 488 women, across ten provinces in eastern Indonesia, in setting up or improving clean energy businesses. Together they will reach 235,000 people with life-improving energy technologies in some of the poorest provinces of Indonesia. The project facilitates technology adoption and creates new business opportunities for poor women without them having to take on risks or debts. Working with existing networks of women's groups, Kopernik will provide women and women-managed shops with extensive training and a range of life-improving technologies, such as fuel-efficient biomass cookstoves, solar lights and water filters, on consignment: Kopernik provides them with the technologies, which have to be paid back once sold. The women become 'Tech Agents' or 'Tech Kiosks' and sell the products to their communities. They earn a margin from

WHERE?

Ten provinces in eastern Indonesia: East and West Nusa Tenggara, Maluku and North Maluku, plus six provinces in Sulawesi

Partners: PEKKA (Women-headed household empowerment programme)

WHAT?

Fuel-efficient cookstoves, solar lanterns, solar home systems, water filters

PROPOSED PROJECT TARGETS:

488 small-scale women entrepreneurs

235,000 end-users

each sale, reimburse Kopernik for the cost of the products and replenish their inventory.

The technologies themselves improve household socio-economic productivity, are environmentally sustainable and foster positive change in the community. Moreover, in cooperation with ten local partners, Kopernik will improve communities, not only by offering clean energy products but also by increasing the business skills and confidence of the women.



SOLAR SISTER – KENYA, NIGERIA, TANZANIA AND UGANDA

With 'A green energy revolution powered by women's enterprise' as its mantra, the social enterprise Solar Sister adopts a gendered approach to improving energy access. Solar Sister's goal is to provide clean energy access to 10 million Africans by empowering 5000 Solar Sister Entrepreneurs in the coming ten years. The ENERGIA WEE Programme "A Green Energy Revolution Powered by Women's Enterprise" will enable them to scale up their network over the next three years. Rooted in an enterprise-based model, Solar Sister is convinced that this is a more scalable and sustainable approach than a purely aid-based project which does not develop the market. Solar Sister is investing in the establishment of a sustainable solution to address the critical challenges related to energy access and climate change faced by African women and their communities.

By working with both clean technology providers and grassroots women's networks, Solar Sister strengthens clean energy value chains by actively engaging women. Here, the gendered approach is highly needed as 70% of Africans without fundamental access to electricity are women and girls.



WHERE?

Kenya, Nigeria, Tanzania and Uganda

Partners: The Africal Wildlife Foundation, the Mother's Union, d.light design, Greenlight Planet, Barefoot Power and Envirofit amongst others

WHAT?

Solar lanterns

PROPOSED PROJECT TARGETS:

1,000 small-scale women entrepreneurs

Over 800,000 end-users

Business Model Recruit. Train. Mentor



Solar Sister has built a dynamic ecosystem of public-private partnerships encompassing implementation, technology and institutional collaboration to achieve its goals. In this WEE programme Solar Sister focuses on the following levels: Organisational support by investing in green jobs and training of its country teams; Programmatic support to provide women entrepreneurs with a continuous sisterhood of support, mentorship and awareness building; and on the Stakeholder level where women's voices are positioned in the ongoing global debate on energy access.



PRACTICAL ACTION EAST AFRICA - KENYA

Even though women play a central role in Kenya's last-mile energy provision and consumption, through energy-consuming micro- and small enterprises, they are less likely to grow and are smaller than male-owned businesses. This is attributed to a lack of business and marketing skills, poor governance structures and struggles with value-adding services such as marketing, credit and information. Women dominate the cookstove and briquette production sector, but very few are economically empowered as they mainly work in the labour-intensive and low-pay links in the value chains.

While the production of stoves and the promotion of solar products have been ongoing for many years, the penetration of these products in households and institutions is still very low throughout the country. Further, women also rely on inefficient sources of energy such as firewood, charcoal and kerosene as opposed to taking up efficient and environmentally friendly technologies such as briquettes.

To address this scenario, Practical Action East Africa and Services for Community Development Services (SCODE) have a three-year action project "Women in Energy Enterprises in Kenya (WEEK)" to strengthen women's capacity to effectively participate in and benefit from the energy markets as both actors and beneficiaries.

The project aims to work with women entrepreneurs in three main value chains: improved cookstoves, solar products and biomass briquettes. The team will address the challenges faced by women entrepreneurs by supporting production of quality products, sustainable financing and market development in order to promote women's economic empowerment while increasing the availability of clean energy sources to consumers.

Across the eight counties targeted, the project aims to benefit 730 small-scale women energy entrepreneurs (WEEs) in developing micro- and small enterprises (MSEs), as well as 450 individuals, half of whom will be women, employed by these MSEs. It is expected that 364,200 people, including



WHERE?

Rural and peri-urban areas of eight counties located in four regions of Kenya: Central (Muranga), Rift Valley (Nakuru, Bomet and Kericho), Western (Kakamega) and Nyanza (Kisumu and Kisii)

WHAT?

Solar lanterns, improved cookstoves, briquettes

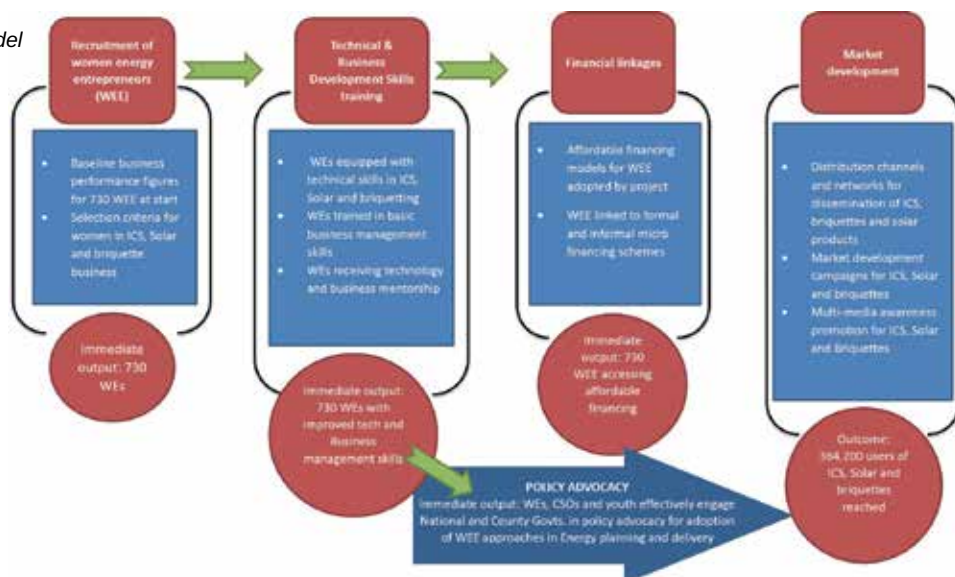
PROPOSED PROJECT TARGETS:

750 small-scale women entrepreneurs

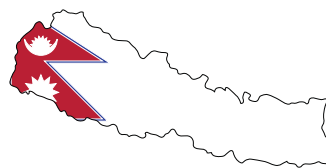
364,200 end-users

poor women, men and children, and institutions will benefit from access to improved technologies in the project areas. Support will be provided on a regular ongoing basis. Practical Action will provide assistance in assessing the market, as well as in expanding and strengthening entrepreneurial associations for business owners. The organisation will also boost awareness of the different energy technologies available to meet lighting and cooking needs. The focus on gender equality, alongside targeted women empowerment strategies, will be applied at the local level, and the aim is also to strengthen institutional capacity for lobbying and advocacy in Kenya and beyond.

WEEK-
Business Model



Access to modern energy is still challenging in the six Nepalese districts where CRT/N runs its WEE project “Promoting Women-led Enterprises for Energy Access and Local Production”. As many as 70% of households still use firewood or cow dung as their primary cooking fuel, while only 64% of the population have access to the national grid. CRT/N’s project will contribute to increasing rural communities’ access to clean cooking solutions.



Further, the project aims to unlock the potential of rural women by offering them access to resources to improve their micro-enterprises and thus enhance their incomes, as women currently have little time and opportunity to engage in income-generating enterprises. Opportunities that exist are further hindered by high rates of illiteracy, few opportunities to participate in decision-making, little know-ledge of their legal rights, limited access to modern and sustainable energy solutions and to investment capital. The project will address the problems of low-level entrepreneurship amongst women by enhancing their entrepreneurial capacity through training and intensive technical and business support in expanding existing micro-enterprises and initiating new ones in the field of sustainable energy technologies.

In total, 50,000 households will gain access to energy technologies in the form of improved cookstoves, and 1000 will engage in energy enterprises.

The project will also raise awareness on sustainable energy access and productive uses. As the project is promoting improved cookstoves as a clean cooking technology, information on the health hazards caused by indoor air pollution will be provided to the communities. In addition, the communities will also be educated on energy efficiency, savings in time spent cooking and kitchen improvements that can be achieved through the use of improved cookstoves.

WHERE?

Provinces of Khotang, Udaypur, Sindhuli, Kabhre, Lalitpur, Dhading

Partners: National Association of Community Electricity Users-Nepal, (NACEUN) and Practical Action Consulting (PAC)

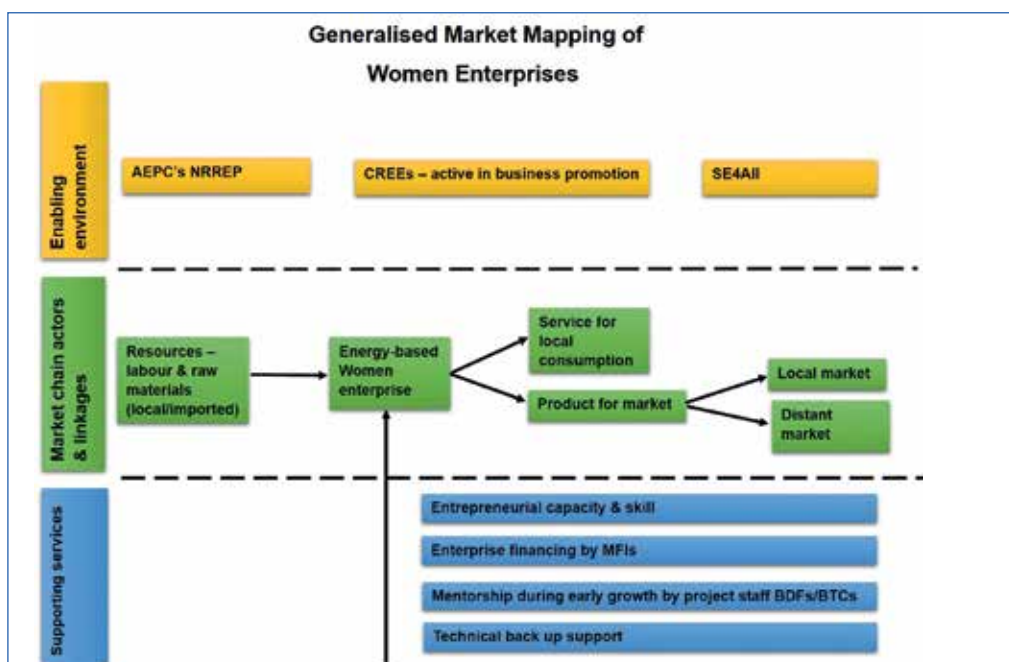
WHAT?

Improved cookstoves, productive use of energy in micro and small enterprises

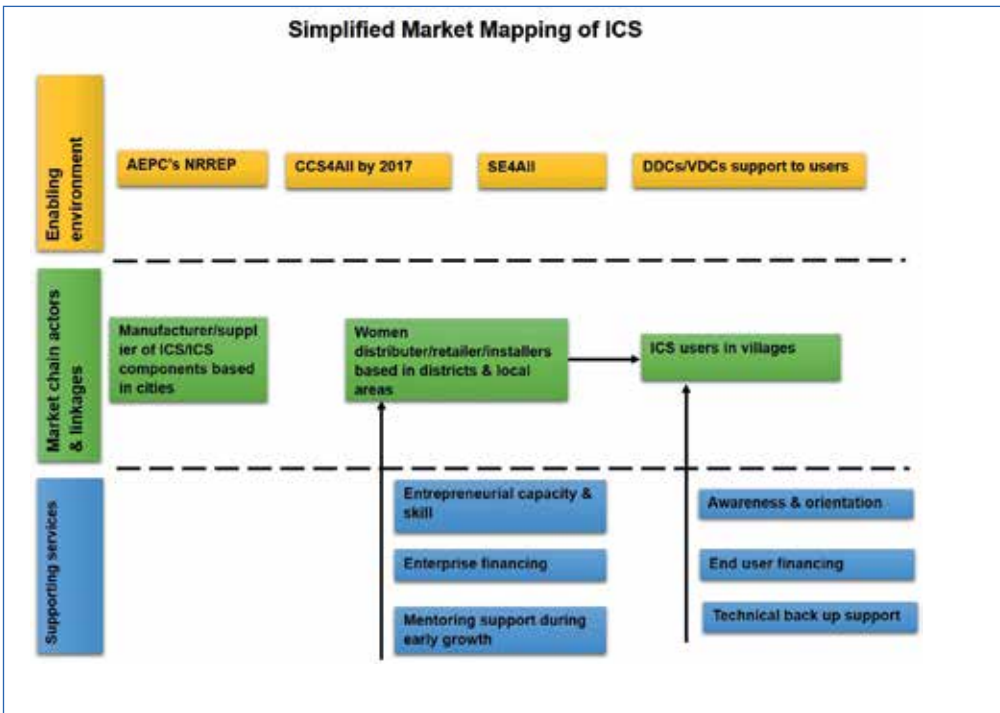
PROPOSED PROJECT TARGETS:

1,000 small-scale women entrepreneurs

250,000 end-users



Simplified Market Mapping of ICS



Acronyms

AEPC:	Alternative Energy Promotion Centre/Government of Nepal
CREE	Community Rural Electrification Entity
NRREP	National Rural and Renewable Energy Programme
CCS4All by 2017	Clean Cooking Solutions for All by 2017 (a campaign of Government of Nepal)
SE4ALL	Sustainable Energy for All
DDC	District Development Committee (district level government body)
VDC	Village Development Committee (village level Government body)
MFI	Micro Finance Institution

GENDER AND ENERGY RESEARCH PROGRAMME

In 2014, the ENERGIA International Network on Gender and Sustainable Energy established a large research programme to generate and analyse empirical evidence on the links between gender, energy and poverty, and to translate this evidence into recommendations for policy and practice. Five individual four-year research projects will start in January 2015.

The research programme is funded by UK's Department for International Development (DFID) as part of its commitment to the Sustainable Energy for All Initiative (SE4All).

WHY

Globally, over 1.3 billion people do not have access to reliable and affordable electricity services, and over 2.6 billion people do not have access to clean cooking facilities. In 2011, the global 'Sustainable Energy for All' (SE4All) initiative was established to address these issues, and DFID is supporting the initiative through its research and evidence funding and its policy work. Research is needed to inform evidence-based policy and practice that can realise the potential socioeconomic impacts of energy interventions.

Currently, independent empirical evidence is lacking on differences in the impacts on men and on women related to

The consortia include partners from research institutions, NGOs and private companies, offering both the capability to perform high quality research and to create links to policy and practice.

The research programme has been formulated using the Theory of Change: central to which is the idea that evidence can have a strong influence on policymaking.

Within this research programme, five consortia will perform research, each covering a different research area within the theme of gender, energy and poverty:

1. Electrification through grid and decentralised systems, with a focus on impacts;
2. Productive uses of energy; looking at the benefits of energy access for income generation;
3. The political economy of energy sector dynamics; this is a relatively new approach to energy sector analysis, and studies decision-making while recognising that different actors will differ in their experiences and expectations of the advantages and disadvantages of choices made;
4. Energy sector reform; and
5. The role of the private sector in scaling up energy access.

"This research programme creates an opportunity to generate a substantial body of credible, particularly quantitative, evidence which can convince both policymakers and the private sector of ENERGIA's long held principal that a gender perspective is beneficial for all stakeholders in the energy sector."

Joy Clancy, Principal Investigator, Gender and Research Programme

characteristics of energy supply and access, and also in the use of end-use equipment. Such knowledge is necessary to create insights into how to enhance the positive impacts for all. With the large current efforts to increase energy access, this is an urgent issue as there are many indications that access and impacts differ. Also, the indications that a gendered approach to energy supply, involving women in decision-making and in the supply chain, is beneficial to increasing sustainable access have not been substantiated and generalised into evidence that can be used to guide practice.

It seems evident that taking a gendered approach in policy and practice will be necessary to achieve the target of universal access to energy by 2030.

For the nearly twenty years since its foundation, ENERGIA has worked with governments, donors, civil society and public and private sector energy organisations to incorporate a gender approach in policy and practice. It is against this background that ENERGIA is managing this research programme to generate empirical evidence that is rigorous, has scientific legitimacy, buy-in by policymakers in the energy sector and yields generalisable and policy-relevant findings that are likely to be replicable and scalable.

PROGRAMME STRUCTURE

ENERGIA's International Secretariat will manage and coordinate the programme and support the dissemination activities. Sheila Oparaocha, Annemarije Kooijman, Huub Kwantes and Rand Al-Shamaa will be supported by Joy Clancy as Principal Investigator.

The Programme has a Technical Advisory Group consisting of experts in both energy and gender and from multilateral organisations and research institutes.

EXPECTED IMPACTS

The research programme not only addresses the lack of the information necessary for evidence-based policy and practice. Within the programme, the involvement of stakeholders throughout the process, the organisation of workshops to discuss implications for policy and practice, and the active dissemination both of findings and of recommendations for policy and practice are expected to lead to new policy and practice. The impacts are expected to take place not only in the countries studied by the various consortia; efforts will be made to extend the findings to other contexts.

AN INTERVIEW WITH... SHEILA OPARAOCHA

ENERGIA International Coordinator and Programme Manager



Sheila Oparaocha giving her openings speech at the inception meeting of ENERGIA International Secretariat and partners in the Women's Economic Empowerment programme. Photo: Tjarda Muller/ENERGIA.

You have been working on the nexus between sustainable energy and gender since you started at the ENERGIA International Secretariat in 1999. What are the biggest challenges that you have encountered?

In the energy sector, gender is usually treated as ad hoc, an add on - people do not understand it. It is not systematically incorporated in planning processes with set targets and indicators to deliver on. If there are no indicators that you have to report on, at the end of the day it is left behind.

Within the Millennium Development Goals (MDGs) there were no specific goals related to energy. Why, then, should 'sustainable access to energy for all' be a specific post-2015 Sustainable Development Goal (SDG)? Does this have any specific benefits for women and girls?

I think it is really important that energy is now recognised as a SDG because energy is an enabler to achieving all the development goals. Without energy, you cannot have cooked food, you cannot have clean water, good health facilities, or properly run a business. Energy is an enabler for all social, economic and environmental purposes.

Having it as one of the global objectives keeps the international community focused on achieving this goal because there is a commitment on which you have to report and develop strategies and invest. If you do not have a goal, a

light at the end of the tunnel, it is very difficult to develop a path and any focus is easily lost.

Having sustainable energy for all as a specific SDG has huge benefits for women and girls. First of all, when you look at household energy, women and girls suffer the most from lack of access in terms of the amount of time they have to spend collecting fuelwood. Moreover, they are responsible for cooking, and there are a lot of health issues linked to indoor pollution. It also has intergenerational impacts, for example, a mother who has to spend a lot of time collecting wood will keep her children, especially her daughters, away from school to help her with household chores.

Looking at it from another angle, women's productive activities are in general very energy intensive while, at the same time, most of them rely on rudimentary forms of energy, mostly fuelwood and their own physical effort. So, gaining access to modern energy services will have the greatest development benefits for women, enabling them to increase their productivity and income. In addition, because women invest their incomes in their families' livelihoods, children's education and in local economies, using a gendered approach leads to an inclusive approach to scaling up energy access.



Sheila Oparaocha visiting a baobab processing plant in Goudiry, Senegal at which ENERGIA partner GVEP has supported women groups to access electricity services to increase the value addition of their agro-processing. Photo: Maurits van Tongeren/ENERGIA.

The United Nations declared 2014 – 2024 the Decade of Sustainable Energy for All. During the first two years of this decade, a special focus will be on women and girls. What progress in energy access for women and girls in developing countries do you expect by the end of the SE4All decade?

I expect that, by the end of the decade, a lot of awareness will have been raised on the nexus linking energy, gender equality and women's empowerment, and that this awareness will translate into commitment and resources to support programmes that either strengthen women's participation in energy value chains or deliver energy services to sectors that are important for women.

Concrete examples would be an increase of energy services to clinics, especially those focusing on maternal health; an increase in the dissemination of clean fuels such as LPG and also improved biomass stoves for cooking energy; an increase in the number of women businesses supplying energy services at all levels, not only the micro-enterprise level but also on medium and large scales. I expect to see an increase in women's active participation in decision-making over energy policymaking and regulation but, most importantly, I hope to see new actors, such as private sector investors, realising the value added by using a gendered approach.

In its earlier phases, ENERGIA focussed on gender mainstreaming in energy policies and projects. Why the shift to working with micro- and small scale women-led enterprises?

In the beginning, ENERGIA focussed on creating an enabling environment for working with gender issues in the energy sector in developing countries. We were focused on getting the right institutional planning and monitoring frameworks in place and on establishing the right expertise and capabilities to work on gender issues. However, once we were working on achieving those goals, what we found was missing was a targeted approach to scaling up the involvement of women entrepreneurs in energy value chains. That is why we started the Women's Economic Empowerment programme - to really focus on this. We found, when you talk about access to energy, that

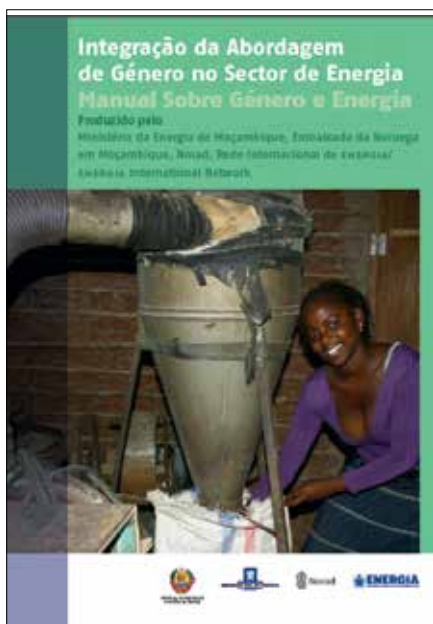
women and women's groups tend to have an advantage over other actors in terms of marketing and distribution in remote and rural communities. Wanting to reach the very poor who lack access to energy, we therefore concluded that it was crucial to use women entrepreneurs to scale up energy access. This is in line with ENERGIA's commitment to contribute to the target on Universal Access to Energy for All by 2030.

There is another new focus to ENERGIA's work. With funding from the UK Department for International Development (DFID), ENERGIA recently started a five-year research programme called the Gender and Energy Research Programme (see pp. 26). Why is it so important to support evidence-based research, and what outcomes do you expect from this programme?

If we are to reach the target of universal access to energy, business-as-usual approaches will not work. It is crucial that we focus on approaches and business models that show value for money in delivering positive impacts on women, girls, boys and men. In order to do that, you need empirical evidence that proves what works and what does not. At the moment, this is lacking. With the research programme we aim to contribute to filling that gap and showcase approaches that actually work.

Where do you see ENERGIA ten years from now?

I see ENERGIA as still being a global movement that convenes the international community to work on gender equality and women empowerment issues in the energy sector. It will be a movement that has buy in from leading actors from governments, the private sector and civil society. It will be a movement that will be proud to say that half of the poor women in the countries where the network is active are able to access modern and affordable energy services of their choice for productive, domestic and social activities.



MAINSTREAMING GENDER IN THE ENERGY SECTOR (IN PORTUGUESE)

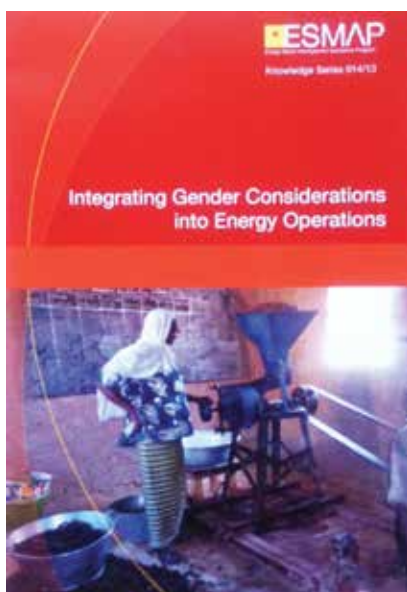
This manual is designed to support the training of planners and programme managers in energy ministries, utilities and private sector companies involved in energy infrastructure projects, so as to increase their capacity to bring gender aspects of energy into the planning cycle. There is also a need to encourage gender specialists to increase their involvement in the energy sector. The manual is written in a way that does not require a technical knowledge of energy nor a social science background. The training manual is accompanied by a trainers guide.

Three major target groups are envisaged:

- Energy planners and project managers whose background is in technology but who recognise the need to address gender issues in their work and want to know how to do this.
- General development planners, and particularly gender specialists, who recognise that energy is a basic component of development but are not sure how to integrate this with other aspects of their work.
- Gender Focal Points. Increasingly organisations are appointing individuals to take responsibility for mainstreaming gender in their organisation. This manual gives ideas on how these focal points can achieve their goals.

Published by: ENERGIA, **Year:** 2014

Download full version of the manual and the trainers guide (in Portuguese) at: <http://www.energia.org/knowledge-centre/training-material>



INTEGRATING GENDER CONSIDERATIONS INTO ENERGY OPERATIONS

This briefing note discusses key elements of the 'gender in energy' topic and provides specific examples on 'how to' integrate gender considerations into energy policy dialogue and the project cycle. This note draws on recent experiences within the World Bank and elsewhere in mainstreaming gender in energy projects. It aims to consolidate this knowledge and make it available to energy practitioners addressing gender aspects of energy projects. This note is complemented by a compendium of online resources to provide energy teams with basic tools, such as sample questionnaires, terms of reference and screening guidance, as well as reference material on gender and energy. These resources have been developed by drawing on the experience of the Energy Sector Management Assistance Program's (ESMAP's) Africa Renewable Energy and Access (AFREA) gender and energy program, where gender considerations have been integrated into five energy operations in Senegal, Mali, Benin, Tanzania and Kenya. Section 3 of the note and the ESMAP/AFREA online resources are organised around the three key areas that the World Bank considers essential parts of a gender-informed project: assessment, actions, and monitoring and evaluation.

Published by: ESMAP, **Year:** 2013

Download full version at: <http://www.esmap.org/node/2743>



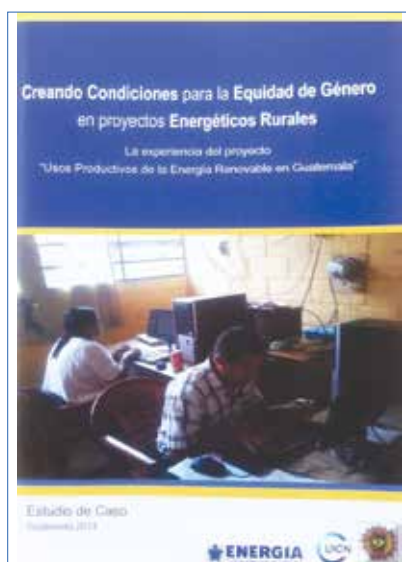
GUIDELINES ON GENDER AND ENERGY FOR TRAINERS, PUBLIC POLICY MAKERS AND PROJECT MANAGERS (IN SPANISH)

These guidelines are unique in their effort to compile, and consolidate in a single document, a series of gender methodologies specifically designed, or modified, to support gender-mainstreaming strategies in policies, institutions and projects in the energy sector. These methodologies build on ENERGIA's experience with gender audits and implementation of energy projects, adapting these to the Latin American context. The guidelines include case studies from the energy sector in a language and format appropriate to the Latin American region. Moreover, they include recent experiences from within the region, showcasing regional case studies, know-how and best practices.

The target groups for the guidelines include gender trainers, policymakers, government representatives and project managers in the energy sector.

Published by: ENERGIA, OLADE and IUCN, **Year:** 2014

Download full version (in Spanish) at: <http://www.energia.org/knowledge-centre/training-material>



CREATING CONDITIONS FOR INCORPORATING GENDER IN RURAL ENERGY PROJECT (IN SPANISH)

This case study, developed by Fundación Solar, showcases their experience with the Productive Uses of Renewable Energy Program (PURE) that promoted the use of renewable energy, particularly micro- and small hydropower, as well as pilot projects with solar systems, bio-digesters and improved cookstoves. Although the programme did not include gender considerations in its original design, these were added later by the programme team in response to the gender gaps in women's participation in decision-making processes, in access to technical training and in income-generation activities. The case study reflects on the challenges faced during implementation and the successes in achieving greater gender equality and empowerment in rural communities in Guatemala.

Author: Fundación Solar

Published by: ENERGIA and IUCN, **Year:** 2014

Download full version of the case study (in Spanish) at: <http://www.energia.org/knowledge-centre/training-material>



COOKING WITH GAS: WHY WOMEN IN DEVELOPING COUNTRIES WANT LPG AND HOW THEY CAN GET IT

The World Energy Outlook estimates that almost 1.3 billion people living mostly in developing Asia or Sub-Saharan Africa and in rural areas are without access to electricity. Reports estimate that another 2.6 billion people rely on traditional use of biomass for cooking and heating purposes which causes them to inhale carcinogenic smoke resulting in over 4 million premature deaths worldwide, affecting mostly women and girls. This new publication explores the gendered aspects in the access to energy, including the health improvements for the family and women by increasing access to LPG as cooking fuel.

Published by: ENERGIA, **Year:** 2014

Download the full version at: <http://www.energia.org/knowledge-centre/energia-publications>



International Secretariat, hosted by:
ETC Foundation
Kastanjelaan 5, 3833 AN Leusden
The Netherlands
Phone: +31 33 4326000
Fax: +31 33 494 0791
E-mail: energia@etcnl.nl
Website: www.energia.org