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Newsletter of the ENERGIA international network on gender and sustainable energy

Colophon

This magazine is published by the ENERGIA International Secretariat, based at Hivos, people unlimited. ENERGIA is an international network of like-minded organisations and professionals, active in 22 countries in Asia and Africa. Our vision is that women and men have equal and equitable access to and control over sustainable energy services as an essential human right to development. To achieve this, we:

- contribute to energy access for all by scaling up the delivery of energy services through women-led micro- and small businesses,
- advocate for and provide technical support to mainstream gender approaches in energy policies and programmes,
- provide the evidence base for improving energy investment effectiveness through research,
- raise awareness and enhance knowledge of issues related to gender and energy through networking and knowledge products.

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Cover photo: Janmoni Borah taking stock of solar lanterns in the charging station, Jaronigaon village, Assam, India. (Photo: Lighting a Billion Lives Initiative/TERI)

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Building the evidence base for improving energy interventions' effectiveness by taking a gender approach

In this editorial, we start by looking back at some key moments for gender and energy since the previous edition of ENERZIA News in 2015, that influence ENERZIA's work. This was the year in which the Sustainable Energy for All initiative (SE4All) picked up speed, and great steps forward were made in incorporating gender and energy issues in the Sustainable Development Goals (SDGs). Both at the international policy level and at the national policy level, the attention to gender in the energy sector is increasing. This means that policymakers are looking for policy recommendations to support and accelerate reaching objectives in the areas of gender, energy and poverty.

The second important event in 2015 for ENERZIA was the start of the research activities for the ENERZIA Gender and Energy Research Programme. The timing of the programme is significant because it will provide some of the empirical evidence that is so highly needed to support the premise that energy access has a different impact on women and on men, and that taking a gender sensitive approach to policy and practice benefits all. This special issue of ENERZIA News has the ENERZIA Gender and Energy Research Programme as its central theme, providing an in depth introduction to the programme's content, its members and stakeholders.

The third significant event in 2015 is a sad one for ENERZIA and the gender and energy research community. At the end of the year, Dr Gisela Prasad, a highly valued member of the gender and energy community and leader of one of ENERZIA's research programme's teams, sadly passed away. This special edition of ENERZIA News is dedicated to her memory. Therefore, we start the newsletter with an article *in memoriam* of Gisela Prasad. Anyone who met Gisela would have recognised an enthusiastic researcher who was capable of motivating the most uncertain young researcher, as well as being a gentle lady with much grace and a winning smile. We will sorely miss her.

The research programme runs from February 2014 to February 2019 with financial support from the UK Department for International Development (DFID). The objective is to generate and analyse empirical evidence on the links between gender, energy and poverty,

and to translate this evidence into recommendations for energy policy and practice. ENERZIA and DFID expect the results of the research carried out under this programme to contribute to more effective policy and project interventions related to energy access, particularly in support of SE4All, as well as to women's empowerment and gender equality.

The research programme consists of research in five areas that were identified as key areas where empirical evidence is needed¹. These research areas (RA) are:

- **RA1: Exploring factors that enhance and restrict women's empowerment through electrification;**
- **RA2: Productive uses of energy in informal food preparation and processing sectors;**
- **RA3: The political economy of energy sector dynamics;**
- **RA4: Gender and energy sector reform;**
- **RA5: The role of the private sector in scaling up energy access.**

The research areas are related, and the programme has been set up to enhance synergy and exchange learning. Sharing information and networking among the teams about countries or regions of overlapping research interest, as well as about topics such as productive uses, subsidies and indicators for impact assessment, will enhance the quality and effectiveness of the research and its dissemination. The collaboration and cooperation is supported through annual programme meetings, webinars and a reserved fund for joint research projects within each research team's budget, as well as through the support structure including the Principal Investigator, Joy Clancy, the Research Coordinator, Annemarije Kooijman and the Technical Advisory Committee (TAG) that consists of experts in the field of gender and energy.

During 2015, the teams were involved in a scoping phase that included literature reviews, field visits, testing of methods and stakeholder consultations to refine their research questions and develop their approaches for empirical data collection. In this ENERZIA News, the five teams present key findings from this scoping phase and provide messages for stakeholders that, if taken



Access to electricity and LPG strengthen women's participation in non-farm enterprises, Kailali, Nepal. (Photo: CRT/N)

into account, will improve energy access, particularly for women and girls, and thus help achieve SE4All objectives. The teams are now moving into the second phase, which focuses on building up the empirical evidence related to their themes.

A key assumption in the field of gender and energy is that access to electricity benefits women, including contributing to their empowerment. The research team working on the impacts of electrification is investigating this assumption. One key finding is that there is little empirical evidence on how electricity policies and programmes empower women and enhance their position in relation to men. This lack of evidence contributes to energy policies being gender blind, which translates into a lack of gender goals in electrification programmes. While, globally, development agencies and International Non-Governmental Organisations (INGOs) advocate the inclusion of gender-sensitive approaches to electrification in their requirements, policy priorities may differ at the national level. The RA1 team reports that stakeholders in the electricity sectors in India and Nepal explain that the lack of gender sensitivity is due to an absence of pressure from the grass-roots level. This is where the research programme will have a significant added value: the RA1 team will look into indicators that can be used to create valid evidence for policymakers and project developers to enhance empowerment through electrification. At the same time, the RA3 team, working from a political economy perspective, will explore the bottom-up approach of empowering women to demand energy access. These complementary approaches will provide policymakers with holistic evidence that can help convince them that taking a gender approach works.

Both the RA1 and the RA3 teams have explored the question as to why energy policies remain gender blind. Policymakers see energy as gender neutral, as benefiting both women and men equally, and thereby fail to see that women and men have different energy needs and assets to enable access to clean energy. This perpetuates, as the RA1 team point out in their article, a supply-side focus with the implicit belief that

an increase in energy supply will lead to economic growth. The RA3 team reveals policy assumptions that increases in rural income, due to economic growth, will inevitably result in increased household purchasing power, which will lead to a switch from biomass to LPG for cooking. However, this completely overlooks intra-household decision-making where, even for cooking energy, it may be men who decide on such a switch. This is an issue in the RA3 focus countries of India and Nepal. Rather, as RA3 shows, it is the empowerment of women, by allowing them to enter paid employment, that can lead to increased incomes and thereby energy access. Research has shown that a key inhibiting factor in the transition to clean energy is the low opportunity cost of women's unvalued labour in collecting and using fuelwood. When women have the opportunity to contribute to the household income, the intra-household dynamics begin to change. Women gain skills and confidence, and this enables them to take control of their own lives. One of the exciting aspects of RA3's research is the ground-breaking application of gender analysis to the political economy of energy. Not only is the team producing much needed insights into how energy policy can be engendered, they are also making a very significant contribution to political economy science.

Energy access impacts on livelihoods, not only through household and social uses, but also, and very importantly, through using energy services to create income. Many women secure an income from working in informal sectors, for example in the informal food sector, where they outnumber men. This is the reason why the RA2 team has chosen to look at the role of energy in productive applications in this sector. The team has already collected empirical data and has identified the existence of energy stacking behaviour in micro- and small enterprises, i.e. that an enterprise uses a range of energy types for different purposes. Women tend to use the energy services they have at home to prepare and store food items, which they subsequently sell elsewhere in the town or city.

In the field of energy sector reform (RA4), a window of opportunity to influence evidence has presented itself. The RA4 report presents the sums of money allocated to fossil fuel subsidies globally, which are huge at an estimated USD 500 billion in 2014. Governments are under pressure to reduce these subsidies and allocate the money to other parts of the economy. This calls for energy sector reform. However, there is very little empirical evidence that can help energy policymakers take decisions that will reduce the negative effects of subsidies while ensuring that SE4All goals are met and that women in low-income households do not unduly bear the burdens of subsidy reform. This makes the research by the RA4 team particularly timely and relevant. The team is looking into the issues of subsidies, their reform and the gendered impacts of this reform on energy access, focussing on cooking and lighting in three countries where reform is high on the political agenda: Bangladesh, India and Nigeria.

One of the challenges ENERGIA has long been addressing is increasing the participation of women in the energy value chain. A significant barrier to women's participation is entrenched in negative cultural attitudes towards women running businesses. In this research programme, both the RA1 and the RA5 teams look at women's roles in the supply chain, the differences in benefits for women and for men of the opportunities offered by developments in renewable decentralised electricity supply, and the barriers to using women's

capacity to support energy supply. When it comes to selling new energy technologies such as solar lights, this can be seen as 'men's business'. The RA5 team is looking at business models that can overcome these attitudes and open up new opportunities for women as entrepreneurs. The team will compare different groups of village-level entrepreneurs in Rwanda: men-only groups, women-only groups and mixed groups. An innovative component of their research is the use of randomised control trials, a method that involves large sample sizes, thereby increasing the validity of the findings. We believe that this is the first time this method has been used in research directed at gender and energy.

This research programme will not only strengthen the evidence base that makes a case for a gendered approach in the energy sector, it will also critically assess the validity of findings from a range of contexts. This will provide important insights into the context specificity of energy access impacts and their influencing factors. Such insights are also relevant for interpreting data external to the research programme, such as the outputs from the large-scale data-collection efforts on energy access that are currently being developed for the Global Tracking Framework (GTF) and the Sustainable Development Goals. The GTF measures the global progress of SE4All towards meeting its objectives and provides an opportunity to collect significant quantities of data on the gendered uses and impacts of electrification.



MSSRF Research team with Dr. Swaminathan and ENERGIA staff. (Photo: ENERGIA).

Members of the ENERGIA Research Programme are collaborating with the GTF in developing gender goals for use at national and programme levels.

ENERGIA has also commissioned a research team led by Joy Clancy, to bring together lessons learnt from gender approaches by ENERGIA and by other organisations to increase ENERGIA's effectiveness, and to inform policy development and practice on gender mainstreaming approaches.

Since the research programme aims to inform SE4All, we also highlight the relevance of gender from the perspective of this international policy platform. Ms Rachel Kyte, the new CEO of SE4All appointed by the UN Secretary-General in January 2016, is the ideal person to present this perspective. We are very glad to have her in our feature interview. Rachel makes a good case for increasing the number of women in decision-making positions: it increases diversity and there is a body of evidence to show that diverse teams make better decisions. She also underlines the need for evidence-based policymaking to ensure the right decisions are taken for energy access that benefits women and men equally, while taking into account their specific needs and circumstances.

The need for empirical research to influence energy sector policies, investment decision-making and implementation is also emphasised in the article by the UK Department for International Development (DFID). This is the reason for DFID to provide financial support for the research programme. DFID's Alistair Wray provides insights into the context of ENERGIA's research programme which is part of a large programme on Energy Access and Gender that DFID is supporting. He also stresses the relevance of early discussions on research take-up with stakeholders, cross-learning and knowledge sharing, all of which form part of the ENERGIA Research programme.

ENERGIA's activities, including on advocacy and the Women's Economic Empowerment Programme, are highlighted in the final pages of this issue of ENERGIA News. For greater in-depth information about the research programme, we encourage readers to visit the ENERGIA website (www.energia.org) that will provide outputs from the research as it develops.

Notes

¹ J Clancy, T Winther, M Matinga and S Oparaocha (2012) *Gender equity in access to and benefits from modern energy and improved energy technologies; World Development Report 2012 Background Paper.* (ENERGIA/Norad/World Bank)

Editors

Joy Clancy



Prof. Joy Clancy is a founder member of ENERGIA and is currently the Principal Investigator for the Gender and Energy Research Programme. On December 1st she was appointed full professor Gender and Energy at the University of Twente, where she joined as a member of the Technology and Development Group in 1989. Joy's research has focused, for more than 30 years, on small scale energy systems for developing countries, including the technology transfer process and the role that energy plays as an input for small businesses and the potential it offers entrepreneurs, particularly women. Recently she has been working on social inclusion and exclusion in biofuel value chains and the impacts on poverty. Joy is also a co-convenor of the Gender and Development Working Group of the European Association of Development and Training Institutes (EADI) and member of the Governance and Technology for Sustainable Development research group (CSTM).

Annemarije Kooijman-van Dijk



Dr. Annemarije Kooijman-van Dijk joined the ENERGIA International Secretariat in the summer of 2014 as Programme Coordinator for the Gender and Energy Research Programme. As Programme Coordinator, Annemarije ensures that feedback and assessment take place to strengthen the research programme, and together with the PI, it is her role to support synthesis and overall findings of the research. Before joining ENERGIA, Annemarije worked at the University of Twente for over 10 years, and at the Energy Research Centre of Netherlands (ECN) for 5 years. Annemarije has a Master's degree in Mechanical Engineering, and a PhD in Energy and Development, on which she has published a book: "The Power to Produce: the role of energy in poverty reduction through small scale enterprise in the Indian Himalayas". Her research work has been on energy and productive uses, renewable energy policy and diffusion of technology in small enterprises.

In Memoriam

Gisela Prasad: A Life, a Celebration



Dr Gisela Prasad was born in Germany and studied for her PhD at the Paris-Sorbonne University where her research was based on the geology of the Greek island of Zakynthos. Prior to taking up an interest and career in Energy Studies, she was a Geologist – Micro-palaeontologist. She lived in Sudan (Khartoum), Tanzania (Dar es Salaam) and Lesotho (Roma) before settling in South Africa (Cape Town) where she lived with her husband. Gisela sadly passed away on 30 December 2015 after a nine-month battle with lung cancer to which her body finally succumbed.

She was an excellent academic and, at her last place of employment, the Energy Research Centre (ERC) at the University of Cape Town which she joined in 2001, on a number of occasions headed the Energy, Poverty and Development Programme where she successfully led a team of researchers working on some of the most important energy research topics for developing countries. Gisela had a passion for academic research that produced direct impacts in changing for the better

the lives of the poor and marginalised. Some of the research projects she led and was part of influenced and shaped energy policymaking and implementation at various levels of government in Africa as well as in some of the most respected international decision-making institutions. She instilled high research morals and values in all her students, colleagues and the various networks that she was part of throughout her career. Gisela supervised numerous Masters and Doctoral students in the field of energy and development. Gisela proved her strong work ethic and unwavering commitment on one of her last projects where she continued to work and support the research consortium while on sick leave. From 2014, she was part of a consortium which had successfully secured a DFID-funded and ENERGIA-managed project together with the University of Twente (the Netherlands), MARGE (Rwanda / the Netherlands) and ENDA (Senegal). As news of her passing spread, her family and colleagues received countless comforting messages from around the world from people that knew Gisela for her work and the values she stood for. Some of the words and phrases they used to describe her include: “a vibrant person”, “dedicated to advancing the African energy agenda”, “she leaves behind a lasting and very positive impression”, “knowledgeable and theoretically inclined”, “key figure in the research community”, “great lady” and “gentle soul”.

On 4 January 2016, Gisela’s family, friends and colleagues gathered for a farewell ceremony held in her memory.

By: Nthabiseng Mohlakoana, with contributions from the University of Cape Town and Jenny Schüppmann on behalf of the family.



The Gender and Energy Research Programme research teams, including Gisela, at the Scoping Phase meeting in Cape Town, November 2015. (Photo: ENERGIA)



A weaver using a solar lantern in Khokapara village, Assam, India. (Photo: Debajit Palit)

Surprisingly little is known about electricity's gendered impact

We were motivated to carry out this research because relatively few studies have focused on the gendered dynamics and impacts of electrification. There seems to be a universal consensus that electricity is important for women's welfare. However, our previous research had shown that electricity's impacts on welfare vary considerably from one location to another. We had also seen variation in women's decision-making power in matters regarding electricity use. For example, women in rural South Africa have gained a high degree of autonomy (Matinga 2010), whereas women in Zanzibar have not (Winther 2008). In rural Afghanistan, where a patriarchal social structure strongly limits women's possibilities, women's involvement in the supply of electricity resulted in established gender norms being challenged (Standal 2010). Curious to find out more, we embarked on this project to scrutinise the conditions that enable women's empowerment through electrification and how changes in welfare are linked with empowerment. We view empowerment as a process towards gender equality, and this requires analytical attention to both women and men.

Beyond taking socio-cultural aspects into account, we were particularly interested in comparing the effects of grid and decentralised systems on women's

empowerment. Interviews with stakeholders confirmed that a closer look at these two main types of systems might provide interesting results. We thus start from the assumption that the design (such as in the type of access this allows) of particular technologies matters in terms of what users can do with them, and also that people may experience benefits from being involved in the process of electrification, and in its daily management and operation. In addition, we look at the influence of policies, regulations and subsidy schemes, and the role of international actors. Few studies have set out to systematically understand the underlying mechanisms of electricity's gendered impact, and we believe such knowledge could inform policy in important ways. The overall objective of this research is to provide policy recommendations that enhance women's empowerment through electrification.

In the forthcoming phase (2016-2018), empirical research will be conducted in Kenya, Nepal and India, countries where a large proportion of the rural population currently lacks access to electricity in any form. The research is interdisciplinary and anchored in anthropology, human geography and energy research, and will employ mixed approaches including ethnographic methods and a survey across the three

countries. The focus of the empirical research will be on (i) women as end-users of electricity, (ii) the inclusion of women in the supply chain, (iii) a comparison between grid and decentralised systems including types of access and (iv) how empowerment in the sphere of electrification may be conceptualised and measured.

In the recently completed scoping phase, the team reviewed electricity policies and interviewed key stakeholders in the three countries studied, and absorbed the general literature on women's empowerment through electrification. We concluded that the notion of empowerment had been treated in a fragmented way in the literature, and thus we have developed a framework for analysing empowerment in the field of electrification.

Key findings from the scoping phase

Review of international and national electricity policies (Kenya, India and Nepal) and stakeholder interviews

- Although some national electricity policies formulated in the recent past do contain a few gender elements (including in Kenya, India and Nepal), electricity policies are mainly gender-blind and do not focus on gender equality. International initiatives only sometimes address gender issues and, when they do, they focus on the different needs of women and men as beneficiaries.
- Wider legislation such as on land, divorce and inheritance rights directly affects women's degree of empowerment through electrification. More attention should be focused on how policies in other areas jointly hinder or assist the empowerment of women through electrification and other measures.
- Stakeholders stated that gender issues are not prioritised as such in the private sector as there is a lack of incentives for doing so. Given the many commercial initiatives taking place at present,

"In centralised grid systems, women are largely seen as beneficiaries whereas, in decentralised systems, women are not just seen as beneficiaries but also as providers of electricity services offering more scope for women's empowerment."

Dr Leena Srivastava, Vice Chancellor, TERI University and member of the Executive Committee of the Sustainable Energy for All initiative



Key Messages

Despite the established gender discourse in development, we see that international initiatives and national policies for electrification are often gender-blind, or they primarily focus on women's domestic role.

Policymakers should become more willing to test measures that generate knowledge on how, why and when women-targeted measures in electrification projects have a positive effect on women's empowerment. These measures should be monitored by research.

An appropriate set of indicators for measuring the gendered impact of electrification needs to be developed.

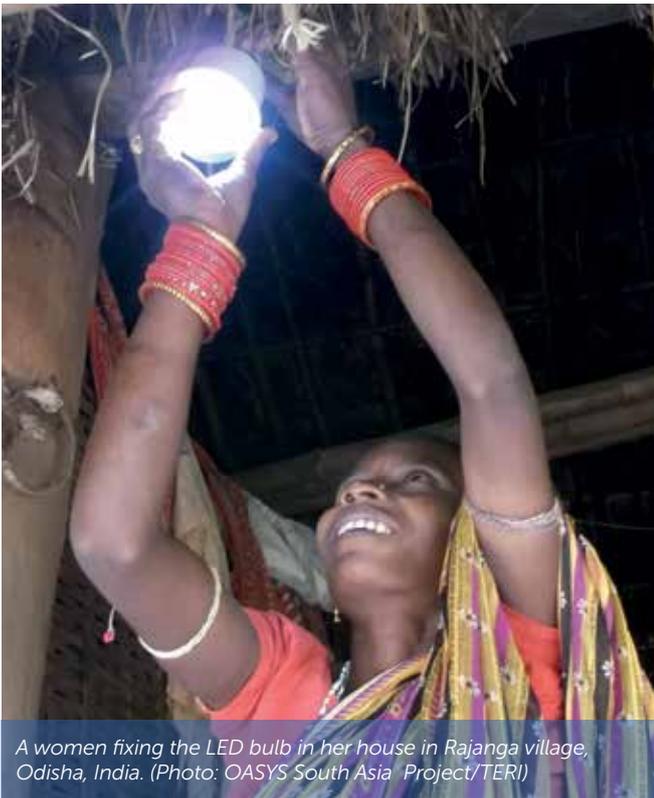
there is a need for knowledge about the gendered organisation and impacts of current private sector initiatives. Policymakers should engage in developing mechanisms that would create incentives for the private sector to include gender goals.

- Stakeholders in the electricity sectors in India and Nepal referred to the lack of pressure from the grass-root level for realising gender goals. This indicates that it may be beneficial to raise awareness and otherwise strengthen capacity at the local level in order to motivate policymakers to take action.
- National statistics use the household as the unit of analysis, and this seriously limits the accumulation of a knowledge base that could be used in research and policymaking. There is a failure by energy ministries to systematically collect gender-disaggregated statistics, and one rarely finds evaluations of centralised and decentralised electricity projects that apply gender analysis or articulate the benefits of policies and schemes pertaining to women.

Key findings from the literature review

Impact of having access to electricity (end-users)

- Access to electricity has a clear and positive impact on women's welfare. The reduced time spent on physically demanding routine tasks (drudgery) is striking, and is linked to other effects in fascinating ways. For example, although electric stoves are rarely used, there is evidence that households with electricity – even after other factors such as income and education are controlled for – are more likely to use alternative fuels (e.g. LPG) for cooking which leads to less time spent collecting fuel (Van de Walle et al. 2015).
- Access to electricity increases children's study time and enrolment in school, and especially girls, even from poorer households, gain in this respect. This



A woman fixing the LED bulb in her house in Rajanga village, Odisha, India. (Photo: OASYS South Asia Project/TERI)

nuances the general observation that wealthier groups benefit most from access to electricity.

- The dominant perception that the only path to gender equality is through women's economic empowerment needs to be re-examined. A central finding is that increased welfare can positively affect women's control over resources and decision-making power, and thereby leads to empowerment.
- Studies in Nicaragua and South Africa have found increases in women's employment rate due to household electrification, whereas an Indian study found no such changes. This points to the need for contextualised analysis of electricity's impact on employment. Also, the link between the various types of income generation and empowerment is under-researched due to a lack of attention to decision-making and long-term control over material resources.
- There are indications that access to television reduces high fertility rates and that the content of television programmes may affect norms that discriminate against women (Brazil, India). As such, television may be an underestimated tool for transforming gender norms.

Impact of including women in supply chains

- There is some evidence that women's inclusion in supply chains has a positive impact on discriminating gender norms and practices (Afghanistan, Mali, and USA in the 1930s). This occurred when women became directly involved in providing electricity services. Conversely, attempts to include women by consulting them in the electrification process have sometimes been sabotaged (Nepal, India).

Keywords

Electrification; grid and decentralised systems of supply; electricity access; gender equality; women's empowerment; energy practices; electricity policy

Research area

RA1: Exploring factors that enhance and restrict women's empowerment through electrification

Research team

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The authors would like to thank all the stakeholders who shared their insights during consultations and interviews. We also acknowledge the valuable contributions of the ENERGIA secretariat and the Technical Advisory Group throughout the scoping phase, as well as DFID and participants in the Gender and Energy Research Programme for their encouragement and useful critiques.



Aïssata Sall cooking food that she will sell on the street. (Photo: ENDA ENERGIE)

The complex context of energy use in the informal food sector: Rwanda, Senegal and South Africa

Energy for productive uses was one of five key research areas identified by ENERGIA in their DIFD-funded call for proposals published in 2014. In addition to the basic energy needs for cooking and heating for domestic purposes, energy is required for a range of income-generating and productive uses. Our research focuses on the micro- and small informal enterprises¹ in the informal food sector (IFS)² in urban areas of Rwanda, Senegal and South Africa. A reason for choosing to focus on this sector is that it is where many women make their livelihoods in urban areas.

Using mixed research methods, we have surveyed and interviewed a wide range of male and female owned enterprises, including some that prepare street food and others that process food products such as tea, coffee, nuts, dairy and fish.

During the scoping phase that took place in 2015, a total of 194 interviews were conducted (179 survey-based and 18 in-depth interviews) with enterprises in

the informal food sector in the three countries. The Scoping Phase provided a baseline for Phase 2 of the project, which will explore, from a gender perspective, the changes that may be brought about within small food preparation and processing enterprises as a result of the use of, and access to, modern energy services (MESs). The project will also track how access to and use of MESs in enterprises impacts on the households (through changing role patterns, responsibilities and decision-making balances) of the enterprise owners and how this affects women's empowerment.

Key findings from the scoping phase

A conclusion of a literature study carried out by ENERGIA is that there is a clear gap in knowledge about the role of MESs in informal sector enterprises³. Many aspects of the adoption of MESs in the IFS are under-researched and, in particular, little is known about the factors that motivate adoption of MESs or the transition to MESs from a gender perspective. For example, are women less likely to adopt MESs in their enterprises than men? Is the



Key messages

Energy policymakers need to be sensitive to the 'energy stacking'⁷ strategies used in enterprises in the informal food sector (IFS) owned by men and women to decrease the vulnerability associated with a single source of energy.

Energy policy needs to plan for the supply constraints and demand projections of energy for productive uses in the IFS sector, and in other energy-intensive micro- and small enterprises. This may include regulating market prices for energy sources preferred by enterprises in this sector.

Excessive regulation does not always lead to the intended results and may be interpreted as punitive by the informal sector. This may limit income-generating activities and lead to a decrease in the livelihood strategies that the IFS and similar sectors rely on. Policies that govern informal enterprises, basic services and platforms for engagement should allow the IFS to raise their needs, co-regulate and develop without adding significant costs and burdening the operations of micro- and small informal enterprises.

Economic development policies need to provide women and men in the IFS and other informal sectors with access to microfinance and the training and support needed to sustain their enterprises while recognising the importance of energy use in this sector.

transition from traditional to MESs universally desired and the impacts always positive on the enterprise?

- As in many other surveys of informal sector enterprises, our survey shows that there are more women owners, operators and employees in the informal food sector than men (see Figure 1 below).
- The informal food sector is an important source of income generation for the urban poor (of whom the majority are women); the sector is also important for urban food security. The preparation and processing of food items in this sector require various forms of energy, including multiple sources of energy for cooking (e.g. gas, electricity, wood, charcoal), and electricity for appliances and for lighting. The majority of households surveyed in South Africa indicated that they use more than one energy source in running their enterprise. Although for some this

was unavoidable, for many it was a choice related to the qualities of the different sources in terms of their business needs, as well as the cost and availability of the energy sources.

- Interviews with enterprises revealed the perception that a mixture of modern energy services for cooking, refrigeration, heating, drying or curing can improve the quality of food⁴, increase market opportunities and income generation, and also improve the health and increase the safety of both entrepreneurs and customers.
- Based on research on the complex behaviour related to the uptake of modern energy at the household level, we have identified a wide range of possible drivers. Studies have found that cash and credit constraints are the most significant factors affecting uptake⁵. However, the role of socio-psychological drivers, such as discount rates, risk aversion, peer pressure as well as contextual factors such as local institutions and the quality of the supply chain have received less attention⁶.
- Another key output from the scoping phase of this study is confirmation of the existence of energy stacking behaviour, where we found that several sources of energy were used in the energy mix of an enterprise for a variety of reasons, including ease of use (electricity), customer preferences (in relation to flavour from cooking over wood), affordability (wood and gas); and availability and regulation (electricity).

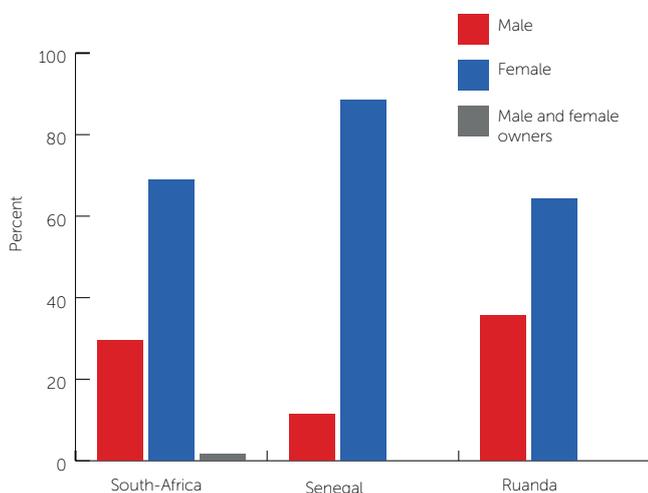


Figure 1: Ownership of IFS enterprises by gender

Gasabo, Rwanda: *Fuel preference*



Street vendors in Rwanda. (Photo: MARGE)

Uwimana sells grilled maize opposite a bus stop in Gisozi, Gasabo. She uses a charcoal stove to grill the maize. She prefers a charcoal stove because it is easy to use in preparing this sort of food, easy to clean and easily available, and also the cheapest option for the enterprise. In her home, they use firewood for cooking, even though she would prefer to use charcoal, because the latter would be too expensive for her to use at home. She chose this work because she thinks it is the easiest business to start in terms of minimal capital requirements as well as the few rules and regulations the IFS enterprises are subjected to in Rwanda.

Saint-Louis, Senegal: *Energy stacking*



Aïssata Sall cooking food that she will sell on the street. (Photo: ENDA ENERGIE)

Aïssata Ndiaye Sall is a divorced woman, and mother of two girls. She sells meals in Doddel, a rural village located in Podor in the region of Saint-Louis (Senegal). She has been doing so for ten years to support her small family. She prepares the meals in her house before selling them to customers in the evening at the village crossroads. She uses firewood, which is cheap and readily available, for steaming cereals, as well as gas for cooking meals. From her wood stove, she recovers charcoal, which she then uses to reheat the meals at the time of sale. However, she considers that gas and coal would be more suitable for her, and also more hygienic. At weekends, she moves her equipment, including the gas cylinder, to an enterprise area which is busy with the weekly market. At home, she also makes use of electricity to keep her stock fresh in a freezer and, at the enterprise location, she uses a cool-box. If she had more customers, she could manage to save and would eventually invest in more efficient equipment for her business.

Dakar, Senegal: *Modern Energy Use*



Mamadou Cellou and Amadou Diallo use a gas stove to prepare the food they sell in their canteen. (Photo: ENDA ENERGIE)

Mamadou Cellou and Amadou Diallo have been cooking and selling food for over ten years in a precarious neighbourhood in the city centre of Dakar. The two men operate in a canteen made of Zinc sheets and, with an electricity supply, they have a freezer. The electricity connection to the enterprise was facilitated by an NGO that worked to uplift the living conditions of people living and working in this district. They use a gas stove for cooking, which they find convenient and allows them to cook meals quickly. They also appreciate the versatility of electricity. They can cook several meals at the same time such as omelettes, French fries, kebabs and spaghetti. They see no problems in using gas. Their priority is to keep the place clean in order to attract customers and they serve hot meals for breakfast and dinner.

Notes

¹ For the purposes of our project, we define micro- and small enterprises as informal enterprises involving no more than five people. These enterprises generally have barely the capital to cover their costs, and most do not benefit from micro-finance schemes.

² The definition of what constitutes the 'informal sector' has long been debated. Here we use a definition based on the OECD Handbook: Measuring the Non-Observed Economy. (2002). The informal sector comprises enterprises not formally registered, which keep no accounts and, where people are employed in an enterprise, they are not formally registered as employed. There are two main categories of enterprises within the informal sector: own account and informal employees.

³ Clancy, J.S., Winther, T., Matinga, M. and Oparaocha, S. (2011), Gender equity in access to and benefits from modern energy and improved energy technologies, Background Paper for World Development Report 2012. (ENERGIA/Norad/World Bank).

⁴ Improved quality refers to perceived improvements such as in reheating food, and keeping food fresh for longer. Most enterprises do not sell food that spoils easily, and they buy their stock daily because of cash flow constraints. This ensures they always have fresh food and also avoids storage which would require modern energy services.

⁵ Bensch G. and J. Peters (2013), Alleviating Deforestation Pressures? Impacts of Improved Stove Dissemination on Charcoal Consumption in Urban Senegal. Land Economics, forthcoming.

⁶ Lewis J.J. and S.K. Pattanayak (2012), Who Adopts Improved Fuels and Cookstoves? A Systematic Review. Environmental Health Perspectives, 120 (5).

⁷ Energy stacking refers to a situation whereby multiple fuel sources are simultaneously used for a variety of purposes and motivations, or users move back and forth between fuel types for both financial and non-financial reasons.

Keywords

energy stacking, multiple-energy use, productive uses, informal food sector

Research Area

RA 2: Productive uses of energy in informal food preparation and processing sectors

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Access to energy enabled women to adopt milk processing technology in Nepal. (Photo: CRT/N)

Factoring Gender into the Political Economy Analysis of Energy

This article is based on a scoping study conducted by researchers from the M.S. Swaminathan Research Foundation (MSSRF) and the Centre for Rural Technology – Nepal (CRT). Our research is based on the premise that it is necessary to include gender concerns in the political economy of energy access. Further, we emphasise the need for gender analysis of political and economic processes to understand the strategic energy needs of rural women and men who have experienced marginalisation and exclusion in the development of energy infrastructure. The widespread diffusion and advocacy of the results of this research would help the process of changing energy use by rural and indigenous women through: (i) increasing the receptiveness of policymakers to considering formulating and implementing policies and schemes for the livelihoods of poor women and men; and (ii) the process of rights-claiming by women to energy access and thereby enhancing the agential power of women.

The current wave of discussions on Sustainable Energy for All (SE4All) and on dealing with increased social and gender inequalities as part of the discourse on sustainable development goals has brought a surge of reflections on social norms that influence structures and processes in political and economic development. More recently, UN member states have agreed to ensure access to affordable, reliable, sustainable and

modern energy for all, with a commitment to “work for a significant increase in investments to close the gender gap and strengthen support institutions in relation to gender equality and the empowerment of women at global, regional and national levels” (UN Outcome Document, August 2, 2015).

These policy commitments are complemented by aspirational political goals set for the decade of Sustainable Energy for All. In brief, these include three critical objectives: (i) ensuring universal access to modern energy services, (ii) doubling the global rate of improvement in energy efficiency, and (iii) doubling the share of renewable energy in the global energy mix (SE4All, 2012). Globally, women’s persistent inequality in the political economy is reflected in the pervasive gendered systems in the ownership of productive assets and property, financial services, time use and access to energy.

A quick review of South Asian countries shows that recent policies have introduced gender mainstreaming into the energy sector. However, these policies have been accompanied by non-implementation and a disregard for gender-specific energy needs. There is also a rural – urban gap in access to modern energy (electricity and LPG). The gaps are even greater when it comes to indigenous women in remote rural areas.

In contributing to the goal of SE4All, our overall research objective is *to understand the factors that constrain or facilitate women's agency in accessing energy for social reproduction and production activities, leading to gender sensitivity in energy policies and women's empowerment in energy transitions. Our key research question is: How can women in rural areas be empowered to gain access to modern energy services in both production and social reproduction?* We attempt to demonstrate that gendering the political economy makes a difference in understanding women's agency in energy use. Women's agential power (ability to make decisions and act on them) and associational strength, largely acquired through collectives (Self Help Groups in India, and Saving and Credit Groups in Nepal) and ownership of productive assets, can influence social institutions, norms, and the State and the market in their energy policies and practices.

Gender Analysis and Women's Work in Energy Access

The research was conducted in India (Koraput District of Odisha) and Nepal (Kailali District). We observed three major tasks that women undertook: household cooking and care, including fuelwood and water collection; agricultural work; and running small businesses from their doorstep. Improved cookstoves and some agricultural equipment for women's farm-work are available, but social norms related to women's work have blocked their adoption.

Researchers have carried out a gender analysis of laws related to formal rules and informal norms that affect the actions of women and men, such as the laws related to land ownership. Considerable discrimination is hidden as part of customs and cultures. This is also something that gender analysis and political economy have in common. Gender analysis has gone beyond dealing with structures to analyse the possible agential roles of women in changing gender relationships, i.e. from seeing women as merely victims of unequal structures to seeing them as agents of change, and thus seeing the need to modify structures.

Bringing Gender into Political Economy Analysis

There is a gendered form of power that is not captured in the conventional analysis of political economy, which sees women subsumed in a class/race/caste analysis. What is important to note is that male power in gender relationships is rooted in informal social norms and is due to a number of factors including: (i) men's ownership of productive assets; (ii) their control over income and the ways in which it is utilised; and (iii) social and cultural norms that dictate women's responsibility for household work/caring. At a higher level, these are manifested in the exclusion, in macro-policy formulation, of social reproduction from recognised work.

In drawing on the political economy literature, we use the term **agency, or agential power, as the power to make decisions and act upon them**, what is

referred to elsewhere, in the gender analysis literature, as empowerment. Agency is sometimes held to require both resources and processes in order to be empowering. However, rather than seeing agency as just one of many dimensions of empowerment, we see it as synonymous with empowerment. Agency itself can be used to acquire resources, such as land and financial assets, which in turn can enable women to make decisions about investment and production. Further, resources and processes are the key aspects of the social relationships through which agency operates.

There is a long tradition in feminist analyses of integrating gender into political economy analysis. This tradition goes back to the 1990s with the writings of Elson (1995), Jackson and Pearson (1998) and the DAWN group (1985), with an initial focus on analysing the gender dimensions of structural adjustment programmes. These analyses were, however, more concerned with critical theory than with solving energy/technology-related problems.

The failure to include gender analysis in the political economy of energy has been a growing concern in the recent past (Barnet, 2014; Clancy et al., 2012). Critiques of gender-exclusive political economy have developed into a feminist political economy that demonstrates how the gender question influences socio-political processes and structures of power. This gendering of political economy combines analyses of both structural and agential power, and this combination should enable its application to problem-solving in the field of modern energy technologies.

"Gender equality is vital for energy security at the home level. Usually it is women who are in charge of energy management both at home and on the farm. Therefore factoring gender into the analysis of political economy in relation to energy is vital for developing a sustainable energy security system for the family."

Prof. M.S. Swaminathan

The theory of change informs our study in that it tells us that increases in women's agency can bring about changes in fuel use. This is in terms of (i) influencing adoption of gender-sensitive energy policies and laws, (ii) achieving a gender-balance in energy governance structures, (iii) increasing social awareness of the need for women to access clean energy, (iv) increasing the self-confidence and capacity of women to negotiate



Access to electricity increases productivity, Kailali, Nepal. (Photo: CRT/N)

with the State and market agencies for access to modern energy infrastructures for cooking and for agricultural and industrial production, and (v) changing the gender norms and power relationships in terms of women's ownership of productive assets including land and production technologies.

An Overview of the Research-based Evidence

As part of the scoping study for the ENERGIA Research Programme, MSSRF and CRT researchers conducted: (i) a review of energy policies; (ii) interviews with government agencies at the State and District levels; and discussions with (iii) private sector representatives (such as cashew industry owners in Koraput, electric vehicle owners and suppliers); (iv) energy suppliers; (v) individuals in key positions (bankers and local leaders); and (vi) focus groups comprising members of Self Help Groups (India) and Saving and Credit Groups (Nepal). The three major questions were: (i) how is formal/informal control over women's use of clean energy in cooking, agriculture and industries exercised?; (ii) what are the responses of government agencies to women's need for access to clean energy as fundamental to well-being?; (iii) what influence do social/gender norms have in households, communities, markets, and State structures of energy-governance?

Regional and Gender Dynamics of Energy: The gaps related to modern energy (e.g. electricity, LPG) have regional and gender dimensions. For instance, even in the provision of household electricity, there are differences between rural regions of India. There is a regional dimension to the spread of electricity in India since national policies are implemented through state administrative and political processes, resulting in variations between states. Statistics from 2011 show that some states (Maharashtra, Tamil Nadu, Punjab, Andhra Pradesh) have high levels of rural household electricity access (over 90%), while less than half of

households have access in other states (Odisha, Bihar, Uttar Pradesh, Chhattisgarh). The states with high rural electricity access share some common features. For example, in these states, there are strong farmer lobbies that have a stake in rural electrification. These rural lobbies have opposed the moves towards privatised electricity distribution and the attendant withdrawal of electricity subsidies. In contrast, Odisha, with little rural electrification, was the first state to privatise electricity distribution, an action supported by the World Bank and DFID. The ruling elite had long embraced a policy of mineral-based industrialisation to promote inexpensive electricity in urban areas and, with little electricity-based rural development, there was no opposition within the state to the privatisation moves. Further, there is evidence that movements from below, such as mobilisations on the basis of being lower caste or farmers, can influence electrification policies at the regional level.

Within a scenario of regional differences in rural access to modern energy, women are particularly disadvantaged and their physical safety at risk from a lack of roads, sanitation, safe drinking water and electricity. Travelling long distances to collect fuelwood and water is tedious, and places women in unsafe situations. Cooking with solid fuels further exposes them to conditions adverse to health as a consequence of indoor pollution.

Policy Inadequacy: Despite the early experience of failures related to supply-focussed approaches in energy, policies continue with supply-side approaches, expecting an increase in rural income to lead eventually to a switch to LPG. That is, LPG use will come as a result of the increase in household purchasing power due to economic growth. However, a key factor that has been identified as inhibiting this fuel transition in several studies is the low opportunity cost of women's unvalued labour in collecting and using fuelwood (Clancy et al., 2012; Kelkar and Nathan, 2005). These analyses show



Access to electricity enables small shop owner to invest in refrigerator and expand her business, Odisha, India. (Photo: MSSRF)

the limitations of solutions based on household income or technocratic and supply-side changes, which constitute the dominant approaches to promoting fuel transitions in remote rural areas.

Dynamic of Change in Energy Use: The gendering of political economy not only addresses constraints it also seeks ways to increase degrees of bargaining that could, over time, remake the constraints. Women's energy needs and aspirations are different from those of men, and hence a gender analysis of political and economic processes is key to changing power relationships in a way that can bring women access to clean energy for production and social reproduction purposes. Our interactive research identified the following policy and practice factors that were seen as a dynamic within which political action by women could be the initiator of change in fuel use:

- increased technological literacy of women and girls (as seen in photograph 1);
- the increased value of women's time brought about by men's migration and women's increased participation in productive and commercial activities brought about by infrastructural connectedness and women's groups (as seen in photograph 2);
- technological change in the shape of cheap diesel engines, promoting the mechanisation of agriculture;
- new concerns about women's and children's health due to household air pollution;
- national responses to international concerns about climate change and a clean environment;
- technological change in information and communication technologies (ICTs) leading to awareness of the wider world from radio and television;
- low-cost and efficient appliances for lighting and the subsequent need to only have access to very small amounts of electricity;

- concern for the human rights of indigenous women and men.

The politics of gendering the political economy of fuel use is in women's increased participation in productive activities, often mediated by women's organisations. This has consequent effects in women's greater control over income and assets that, in turn, advances women's agency in their choice of energy use.

Through the involvement of multiple stakeholders, such as energy policymakers and administrators, civil society groups and women's organisations, we intend to contribute to improving women's position and empowerment through their access to modern energy in rural areas. The increased participation of women in implementing energy policies and structures of governance could have a ripple effect within the studied countries and elsewhere in Asia.

Keywords

Political Economy; Gender; Clean Energy

Research Area

RA 3: The political economy of energy sector dynamics

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Gender and Energy Research Programme

DFID perspectives

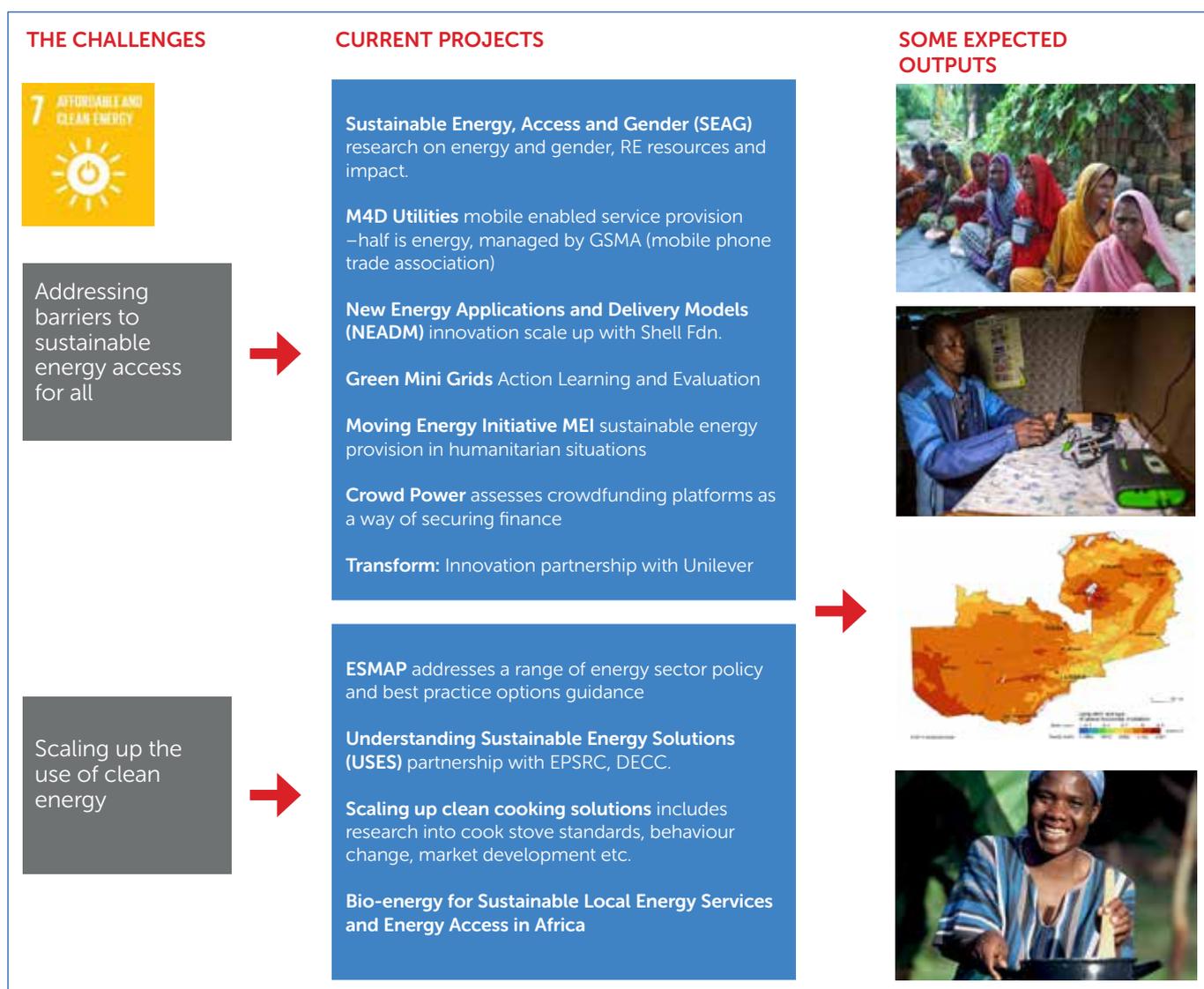
Alistair Wray

Introduction

The UK's Department for International Development (DFID) is very pleased to be working with ENERGIA on this Gender and Energy Research Programme. Modern energy services are crucial for poor people, especially women and girls, in improving wellbeing, accessing social services and promoting productive employment. Girls and women's opportunities are often the most constrained by a lack of light and power – with direct implications for movement at night, personal safety, education and economic activities. As we work towards addressing the needs of the more than one billion people who do not have access to reliable and affordable energy services, and the many hundreds of millions more who are poorly served by unreliable

grid connections, it is crucial that we understand and take into account the different energy needs of women and men, girls and boys. Moreover, electrification can enable women to perform more productive activities and earn more, thereby reducing the gender wage gap. In addition to job opportunities created by scaling up access to modern energy services, employment is stimulated in enterprises providing these services and in supply chains. Gender perspectives are widely recognised as important in shaping the energy sector and the provision of services but these often evaporate when it comes to energy sector decision-making. This research programme will provide important insights and a robust evidence base to help ensure that energy services provide equal opportunities.

Figure 1: Energy and Innovation projects in DFID's Research and Evidence Division (RED)



Policy context

The Sustainable Energy for All initiative and the new Sustainable Development Goal for Affordable Clean Energy (SDG7) have reinforced the central role of energy in development, including the cross-sectoral linkages to education, health, production and climate action and to gender equality (SDG5). DFID has responded with a new Energy Policy Framework that is a central pillar of its Economic Development Strategy, and has recently launched an Energy Africa initiative that aims to accelerate the expansion of the household solar market to help bring universal electricity access in Africa forward from the current trajectory of 2080 to 2030. This seeks to raise awareness of the decreasing cost and increasing efficiency of solar systems, and the spread of mobile payment systems, which make affordable clean electricity possible at less than the cost of kerosene, with a huge potential for market scale-up if the policy, regulatory and financial barriers for entrepreneurs are addressed. This builds on earlier DFID-funded research and innovation.

Gender perspectives are an important and essential crosscutting consideration in all DFID operations and research work streams. This is underpinned by the UK Gender Equality Act which came into force in May 2014 and makes consideration of gender equality a legal requirement ahead of any funding decision. The Gender and Energy research programme will provide important insights to ensure that energy intervention outcomes are optimised. An early activity of the programme was a "Review of how the work of Ashden Award winners impacts the lives of women and girls", conducted in association with Ashden and ENERGIA.

Building the evidence base

DFID has been supporting research in the energy sector for a number of years. Current programmes can be grouped around the challenges of promoting sustainable energy access for all and of scaling up the use of clean energy (see Figure 1). They include working with the Global Alliance for Clean Cooking to scale up clean cooking solutions, with the Shell Foundation on scaling up innovation, with the global mobile phone association, GSMA, on mobile technologies for development plus a number of sustainable energy research programmes covering a range of contexts and technologies including energy for displaced populations and bioenergy.

Recent programmes often have several complementary components. The Sustainable Energy, Access and Gender programme (SEAG), which includes this Gender and Energy Research programme with ENERGIA, is a good example of this approach. It has three components that are designed to inform energy access programmes such that they fully incorporate gender perspectives, optimise the use of clean energy resources, and promote and track inclusive energy access and its uses.

The three components comprise:

- Building the evidence base for improving energy

investment effectiveness by understanding and better addressing women's specific needs for modern energy services through empirical research, led by the energy and gender network ENERGIA.

- Improving knowledge of renewable energy potential through supporting resource mapping in selected countries and making the data publically available to catalyse investment, working with the World Bank's Energy Sector Management Assistance Programme (ESMAP).
- Energy access analytics aimed at better understanding and measuring energy access, its use and benefits in meeting the domestic, social and productive needs of poor communities and households. This component supports the collection of data for the production of the first SE4ALL State of Energy Access Report (SEAR), as well as new editions of Poor People's Energy Outlook, and a review of energy access interventions serving the urban poor.

Overall, while the SEAG programme is still in its early stages, some initial deliverables are beginning to emerge. The Gender and Energy programme is completing the scoping phase of the five identified research themes (i. Electrification (grid distribution and decentralised systems); ii. Productive uses of energy; iii. The political economy of energy sector dynamics; iv. Energy sector reforms and regulation, and v. The role of the private sector in scaling up energy access) and finalising the initial commissioned study on "Lessons learned from gender approaches in the energy sector". A finding from this and other research programmes is that one frequently underestimates the time that it takes to put research teams in place, often involving a number of partners in conducting literature reviews, identifying knowledge gaps and verifying the proposed research work plans. Typically, the first year of such research programmes is spent on procurement processes, establishing common reporting practices and verifying the state of knowledge in the field. This is invariably time well spent: it provides the opportunity to confirm the relevance of the identified research themes, to agree research milestones and additionally offers opportunities for cross-team networking and identification of best practices. Another generic lesson is the importance of early discussions around research take-up and influencing sector policies. Including political economy expertise in the teams is not only very relevant to the gender and energy research themes but also strengthens the ability of teams to engage with policymakers and produce evidence that is relevant to decision-makers. The experience of the other major ENERGIA programme on Women's Economic Empowerment also supports this observation.

Opportunities for cross-learning and research take-up

Just as there are opportunities for cross-learning between the Gender and Energy research teams and ENERGIA, so there are opportunities for lesson

sharing between other DFID research programmes and initiatives, as well as the wider energy sector. The good links established by ENERGIA with the Sustainable Energy for All secretariat is an excellent example of potential influence and promoting the transfer of research to users, and these are encouraged. Within DFID, we will continue to investigate the scope for greater cross-learning and networking between research programmes and related initiatives such as Energy Africa. A key challenge is to take advantage of the latest developments in the fast moving energy sector to ensure that research remains relevant and addresses the opportunities and barriers that emerge. A couple of examples can illustrate this.

Digital and financial inclusion for women

Tremendous advances have been made in the provision of solar home systems, with microfinance and pay-as-you-go schemes making these systems affordable to growing numbers of households. DFID has supported innovation scale-up by incubating business models such as those offered by M-Kopa and d.light. Opportunities exist and can be promoted for women entrepreneurs to become involved, as has been highlighted under ENERGIA's Women's Economic Empowerment programme. However, increasing use of mobile connectivity and 'mobile money' to access energy services reveals another gender gap and barriers to women's use of mobile phones as highlighted by DFID's work with GSMA, the global mobile phone association. Globally, over 1.7 billion females in low and middle income countries do not own mobile phones and women are 36% less likely than men to have a mobile money account. There are also significant regional differences. (see Figure 2).

There are many barriers to women owning and using mobile phones. However, the rapidly increasing use of mobile technologies in expanding energy access provides opportunities for collaboration between our Gender and Energy research and that on the use of mobile technologies for development.

Gender and energy needs in refugee situations

A recently completed DFID-funded study into Heat, Light and Power for Refugees – Saving lives, reducing costs – has looked at energy use amongst the almost 60 million people forcibly displaced by conflict, and the financial and human costs of their current methods of obtaining energy. A key finding is that their energy use is economically, environmentally and socially unsustainable, and that children and women bear the greatest costs. The Gender and Energy research programme's emphasis on analysing gender relations, on examining how access to energy could transform gender relations and empower women and girls, and on policy influencing should have important implications here, especially given the increasing proportion of donor funding, including from DFID, being directed to fragile and conflict-affected situations.

Conclusions

Energy interventions are now widely recognised as central to development in terms of meeting poor household's basic needs, improving wellbeing, expanding livelihoods and boosting economic opportunities. DFID has a growing portfolio of energy interventions, underpinned by energy-related applied research and innovation programmes, which all must address gender equality. Nevertheless, the ENERGIA Gender and Energy research programme is unique in mainstreaming this relationship through a significant long-term gender-focused programme. Drawing on the resulting analysis and using the lessons learnt from the research to influence energy sector policies, investment decision-making and implementation will be crucial for optimising energy access for all. We are encouraged by the progress to date, the research studies identified under the five work streams and the scoping phase activities undertaken. Already, it is clear that a key to a successful outcome is to proactively promote research take-up and the influencing of policy to ensure that the energy sector reaps the benefits of the overall programme that must be greater than the sum of the individual research activities. We look forward to helping make that a reality.

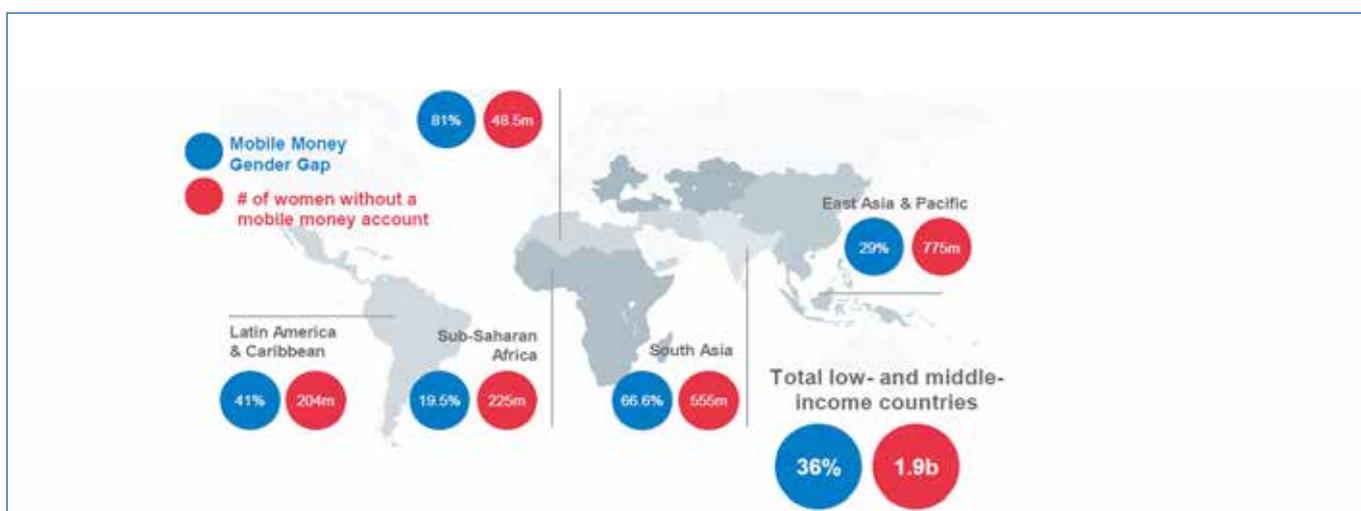


Figure 2. The gender gap in mobile money accounts Source: Global Findex data 2014

Interview with Ms Rachel Kyte,

CEO of SE4All and Special Representative of the UN-Secretary General



Ms Kyte took office as CEO of SE4All on 1 January 2016, and is also Special Representative of the UN Secretary-General for Sustainable Energy for All. Until December 2015, she served as World Bank Group Vice President and Special Envoy for Climate Change, leading the Bank Group's efforts to campaign for an ambitious agreement at the 21st Convention of the Parties of the UNFCCC (COP 21). She was previously World Bank Vice President for Sustainable Development and was the International Finance Corporation's Vice President for Business Advisory Services. Recipient of numerous awards for women's leadership, climate action and sustainable development, she is a Professor of practice in sustainable development at Tuft's Fletcher School of Law and Diplomacy.

What have been the major challenges or barriers and opportunities you have encountered as a woman working in the international political arena?

My experience is that of many other women: better decisions are made in diverse teams. This is supported by evidence and data, which have been a powerful driver behind movements to see many more women in senior management in different institutions and services, and to ensure that boards include at least 30% women. I think I have always found it most difficult when I'm the only woman in the room. That has happened a lot and still happens, depending on the subject under discussion. So in the energy sector, in the finance sector, in infrastructure and transport, there aren't yet enough women in the room to ensure that the decisions we make are robust because of the diversity of the people making them.

That said, my career has been boosted by people who believed in me. They have been men as well as women who have had a commitment to diversity, both personally and in their actions as managers and leaders. I am grateful to them for seeing in me something I may not always have seen in myself.

How did you overcome the challenges and barriers you have encountered in your career?

You have to find allies and champions for what you wish to achieve. Allies and champions can be brought together, and a small group of people, focused and well organised, can have a powerful impact. I think it's also important to have networks of supporters and mentors both inside and outside the place where you work. I've been grateful to have been part of great networks to whom I could turn for advice, guidance and course-correction.

This year (2016) brings to a close the two years in which the United Nations decade of Sustainable Energy for All has been giving special attention to women and girls. How did SE4All fulfil this obligation?

At SE4All's core is the basic fact that a lack of clean, affordable energy has a particular impact on women. Specifically, SE4All has worked closely with ENERGIA and other partners on a campaign to highlight the

importance of energy for women, children and health. ENERGIA co-financed two short films for the Clean Energy is Life campaign that have helped raise awareness of the problems and potential solutions. But as ENERGIA knows very well, there is still much more to do. As we double down on the challenges post-2015, it's very clear that we need to front-load particularly the energy access part of SDG7 in order to be able to ensure that women and children can enjoy access not only to clean and affordable energy but to the services that depend on it.

SE4All has three objectives to reach by 2030:

- **Ensure universal access to modern energy services.**
- **Double the global rate of improvement in energy efficiency.**
- **Double the share of renewable energy in the global energy mix.**

How can women contribute to reaching SE4All's objectives?

In 2016 it is possible to imagine that we can secure access for all before 2030, given the extraordinary pace with which technology is evolving and the business models that are revolving around that technology. I am not saying it will be easy, but this is an achievable goal. A low-income woman can imagine providing power for her family with a solar home system paid for through a cell phone and a pay-as-you-go plan. Access to super-efficient, clean cookstoves is achievable. Now we need the right public policy to encourage finance so we can roll out the business models that make this possible. Policy and finance have to catch up with technology.

At the same time, we know that most small business owners are women, and we must focus on the finance and business models and policy that will allow micro- and mini-grids to spread further across areas where access is an issue, so that those women small business-owners are not in the last mile but in the first mile of energy supply.

As governments clarify how they will secure their own energy transition to ensure access and low-carbon growth, women's voices have to be heard so that priorities are clear.

In order to meet the goals, and to kick-start the energy transition necessary to secure what we committed to in the Paris Agreement, we need to start raising the rate of energy efficiency improvements immediately, especially in high energy-consuming countries. In these countries, women can be a force for behaviour change, and their purchasing power, organising power and understanding that this has to be a just transition need to be translated into pressure to speed up the increase in energy efficiency.

So, if you are a woman in a developed country, you can support programmes that help women in other countries to get access to clean and affordable energy, and you can also drive forward the pace of efficiency in your own country.

What concrete progress in energy access for women and girls in developing countries do you expect by the end of 2030?

The goal is that everybody has access to sustainable energy. It is very difficult to imagine how South Asia and Sub-Saharan Africa in particular, where we have the largest numbers of people without energy access, can build inclusive societies where they are able to sustain development if there isn't energy access. Within SE4All, as we develop our strategy to 2020, we are focused on supporting governments to piece together the policy and finance interventions they will need to allow them to get to their goals for sustainable energy. It is now possible to promote both top-down (i.e. grid-connected, centralised) clean and affordable energy and bottom-up off-grid, mini-grid and micro-grid energy. Both can be feasible and affordable.

We are also conscious that we should not suffer from a poverty of ambition. We will not be satisfied with basic access – a phone charger and a light. For women to prosper, for women to be successful business owners, for women to be successful village leaders, we need to secure clean, affordable energy supplies that can sustain economic activity.

The ENERGIA Research Programme on Gender and Energy is supported through DFID's Sustainable Energy and Gender (SEAG) Programme that also provides support to SE4All. The output of the research is to contribute to evidence-based policy and practice.

Why is it important for SE4All to have evidence-based research? How will ENERGIA's research programme help reach SE4All goals? Do you have any specific questions for the ENERGIA Research Programme or other researchers in the field of gender, energy and development?

We have to be evidence-based because we have to know whether we are having any impact and whether we are achieving results. A results framework is essential for Phase 2 of the SE4All strategy, as we move to

supporting implementation of our goals in the context of the Paris Agreement. ENERGIA's research programme is critically important because we have to know exactly who we are serving, where they are, what they need and want, and the best ways of reaching them with the services they need and want.

Coming into SE4All, I am pleased at the extraordinary collaboration amongst partners to ensure that we do have the data and evidence to be able to show Member States our analysis of progress towards the SDG, and at the same time be able to provide support to governments to report under the Paris Agreement. That said, there is still a lot of work to do. Pointing out essential information gaps and mobilising partners to fill them is also important.

I encourage ENERGIA to maintain its emphasis, and I hope that SE4All in the near future will be able to come with specific issues on which ENERGIA can use its expertise to find answers. For example, in my first weeks in the position, it is already clear that we need much more detailed information on financial flows into the energy sector. Many different partners have a line of sight on one or more pieces of the puzzle: what private finance and what public finance, with what quality and conditions, is flowing to whom in the energy sector, and for what. But the overview seems to be missing, and this is one thing where I think SE4All can use its platform and its broad embrace.

Goal 7 of the Sustainable Development Goals (SDGs), to ensure access to affordable, reliable, sustainable and modern energy for all, is a milestone for the international community. The Global Facilitation Team played an important role in this achievement.

What difference do you expect this to make, particularly as an enabler for all the other SDGs, including on gender equality and women's empowerment?

All SDGs are equal – except when they're not. It's very clear that one needs energy in order to be able to solve issues of water and food (the nexus), but one also needs energy in order to deliver health services and education services. So the achievement of SDG7 has to go hand-in-hand with other SDGs, and in fact has to be front-loaded to achieve success on other issues. The Paris Agreement simply adds urgency to the energy transition, because success means bringing peak emissions forward. So I feel that the remarkable universal consensus around the SDGs was given a booster in Paris.

Now our work is to translate it into real differences in people's lives: cleaner air to breathe; the ability to walk safely to public transport under modern street lighting; the meal cooked without losing a whole morning gathering fuel; the warm school to study in in winter; the opening of a manufacturing plant in a city with reliable, clean power, providing jobs and livelihoods.

Joining the Dots: Fuel Subsidies, Reform, Targeting and Poor Women

Many governments around the world provide subsidies to lower the retail price of fossil fuels. Globally, consumer subsidies on fossil fuels totalled roughly USD 500 billion in 2014. Typically, such policies have technical objectives (such as benefiting the economy and low-income households), as well as political objectives. A large body of evidence finds that, at the aggregate level, these policies tend to perform very inefficiently with respect to their technical goals. For example, they often benefit richer sections of the population through cheaper transport fuels, rather than meeting the energy needs of the poor (Del Granado et al., 2010). Reforming fuel subsidies can free up resources that can then be used to better meet economic and social goals. As an example, after diesel and gasoline subsidy reforms, Indonesia freed up approximately USD 15 billion in domestic resources that was reallocated to ministries, state-owned enterprises and to regions and villages, linked to a number of special programs, including targets on infrastructure, healthcare and education. As a result, many governments have introduced reforms in recent years (see the diagram below), and many of the world's donors strongly back the phasing out of inefficient fossil fuel subsidies.

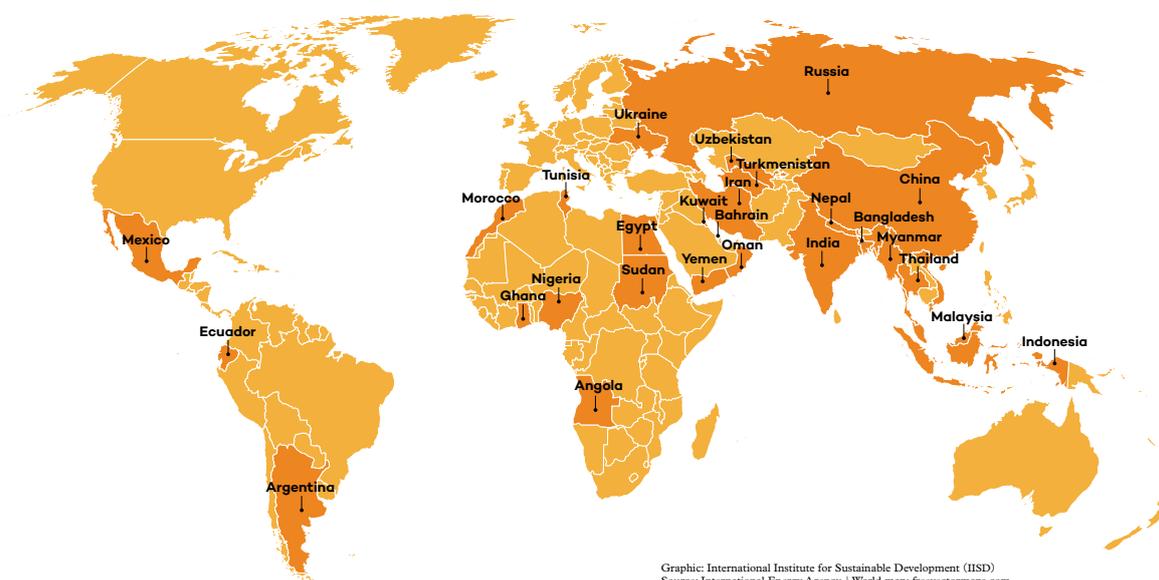
There is, however, limited evidence as to the different ways in which women and men are affected, both by existing subsidy policies and potentially through possible reforms. This knowledge gap is a problem for two reasons. First, despite subsidy reforms being planned in many countries, governments lack a solid evidence base on which to assess the different ways in which women and men may be affected; and second, because of this lack of knowledge, governments are unable to adapt policies in ways that will best promote women's and men's welfare and improve gender equality.

This project aims to establish an evidence base on the impact of cooking and lighting fuel subsidies on women in low-income households in Bangladesh, India and Nigeria, as well as the likely impact of the reforms under consideration in each country. Such reforms include the Indian government's efforts to provide LPG subsidies (in 2014 and again in 2015) through a cash transfer scheme, and recent changes in Nigerian policy to remove subsidies on kerosene (in 2016).

The research will focus in particular on understanding the way that subsidy policies do or do not flow through into

Many countries at least partially increased subsidized prices for fossil energy over the last two years.

● Countries implementing reforms in 2013–2014



Graphic: International Institute for Sustainable Development (IISD)
Source: International Energy Agency | World map: freevectormaps.com

Source: IISD, 2015 based on IEA, World Energy Outlook, 2014.



Victoria Ihuoma Ohaeri, Executive Director of Spaces for Change, talking about gender and energy on Nigerian TV. (Photo: Spaces for Change)

improved access to cooking and lighting fuels (liquefied petroleum gas (LPG), kerosene and electricity) and what this means for women in low-income households. This will include a mixed- methods approach that will use interviews, focus group discussions and survey research to explore key potential subsidy inefficiencies that were identified during the scoping phase. The areas investigated will include: the impacts on poor women of subsidies on fuel distribution; whether official subsidies are actually passed on to the retail prices paid by women; administrative barriers or other transaction costs that pose a disincentive for women to access the subsidy; and the role that price plays in determining the overall access and mix of household fuel use.

The implications of the subsidy–access relationship for women in low-income households will be explored through these methods as well as through an audit of secondary data in each country on the impacts that modern cooking and lighting fuels have on women’s welfare, productivity and empowerment. Data will be gathered from federal and local government officials, from fuel distributors and from women and men in low-income households, focusing on both urban and non-urban areas in each country. In addition, the research will explore the possible impacts of the specific reforms under consideration and will provide examples from around the world on the impact of energy subsidies, their reform and potential targeted mitigation opportunities for women, including case studies from Peru, Mexico and Morocco.

A literature review, which was part of the scoping phase of the research, found that significant proportions of society, especially those living in poverty and/or in rural areas, do not benefit significantly from current energy subsidy schemes. Two countries (India with the DBTL/ PAHAL scheme, and Nigeria with the SURE-P

programme) put specific mitigation measures in place to reduce the impact of rising prices due to subsidy reform.

The review also found a lack of systematic examinations of the gender-differentiated impact of energy subsidies and their reform, and that impacts and policy responses are very context-specific. Nevertheless, it is clear that subsidies and their reform do have implications for poor women (as outlined in the table below). The insights into this dynamic, and the potential for improved targeting of energy subsidies, could have significant implications for policy design, gender equality and access. This research programme aims to further investigate these links and opportunities. It is hoped that the outcomes of this research will enable governments to better understand and make informed choices regarding the implementation of energy sector reform policies and their impacts on women.

Table 1: Expenditure on fossil fuels vs. electricity access and biomass usage

	Expenditure on fossil fuel subsidies (% of GDP) 2013	% of population with no access to electricity 2012	% of population cooking on traditional biomass 2012
Bangladesh	3.2	40	89
India	2.5	25	66
Nigeria	1.3	55	68

Source: Authors based on IEA Energy Access and Fossil Fuel Subsidies Database 2014

Likely Impacts on Poor Women from Fossil Fuel Subsidies, their Reform and Mitigation Measures



Source: 'Gender and Fossil-fuel Subsidy Reform: Current Status of Research' 2016, IISD, IRADe, BIDs, and S4C (forthcoming).



Key Messages

International level: Fuel subsidy reform represents an enormous opportunity for Sustainable Energy for All, but policy efficiency is crucial. Poorly performing energy subsidies come at an enormous cost to women in low-income households.

National level: Removal of subsidies on cooking and lighting fuels can have negative impacts on women, such as reduced household expenditure on women's needs and reduced access to clean and modern energy. Governments should consider adopting a "precautionary principle" and assume that women will be affected in these ways, and then design reforms accordingly, shifting from "universal" subsidies towards "targeted" interventions.

"Gender equality is a catalyst for sustainable development, and sustainable development can promote gender equality. We are beginning to understand that insensitivity to gender differences in energy policies and programmes reinforces social and economic inequalities, compounds fiscal difficulties and tends to place a greater burden on certain groups than on others. Therefore, evaluating and documenting the extent to which women participate in and benefit from energy sector reforms is key to understanding the links between gaps in gender equality and a lack of energy access."

Victoria Ohaeri, Team Leader, Spaces for Change, Nigeria.

Keywords

Subsidies, Women, Bangladesh, India, Nigeria

Research area

RA 4: Gender and energy sector reform

Research team

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Uwarugondo village's VLE, Donatille Yankurije, explaining the recharge process to village member (Photo: Francesco Ficarelli/IPA)

Promoting Female Entrepreneurship in the Rwandan Energy Sector

Gender discrimination is present all over the world, and cuts across multiple dimensions. A dimension that is rarely explored, but has important consequences for women's empowerment, is gender discrimination in entrepreneurship. Women are excluded from profitable businesses due to a mix of cultural and social norms. They are less likely than males to run a business and, when they do, they operate on a smaller scale and in traditional, informal sectors that are often linked to household skills such as cooking and sewing. As a result, female-led businesses are less profitable than male-led businesses. Lower returns on economic activity results in a lower accumulation of education and business skills, thereby creating a vicious circle.

A growing body of research from Africa, East Asia and Latin America shows that female role models can be instrumental in breaking this cycle and changing aspirations among young girls, and among parents about their children's future. These role models can be from the political arena, like village councillors, or from the private sector, such as entrepreneurs. For example, exposure to educated professionals has been shown to improve parents' educational aspirations for their children, and to a greater extent for daughters than for sons (Chiapa et al., 2012). Another study, in Nigeria, found that female entrepreneurs working in male-dominated sectors were much more profitable than other female entrepreneurs. That study found that entry into male-dominated sectors was eased by the presence of a role model and access to information, with no differences in

skills, education or other socioeconomic characteristics compared to male entrepreneurs.

In this regard, our project, which falls within ENERGIA's Research Area 5: the role of the private sector in scaling up energy access, is designed to answer four questions:

1. What are the differences between male, female and mixed Village Level Enterprises in terms of their business operation?
2. How do elements of the business model employed influence adoption and use of rechargeable lights? Our study will systematically compare different pricing options and promotion strategies, with the gender composition of the enterprises a key variable.
3. What effect does having female micro-entrepreneurs as role models have on aspirations – particularly those of young girls?
4. What are the effects for males and females of improved household lighting?

The research strategy combines qualitative and quantitative methods. A scoping study based on qualitative research has provided input for the design of the action-research component of the study. This scoping study mainly consisted of interviews with key stakeholders including the implementing partner, its current clients, local experts in the field of gender and

energy, and organisations with similar programmes to ours. The action-research component will be implemented as a randomised controlled trial (RCT) and is currently being piloted in rural Rwanda prior to the full-scale study. Lighting kits will be allocated among villages, and groups of Village Level Entrepreneurs (VLEs) will be recruited to operate solar-powered charging stations in each study village.

The project's main contribution is the implementation of a large-scale experimental study producing high-quality data that will allow comparison of the performance of VLE groups by their gender composition: all-male, all-female and mixed groups. This approach is novel, since most of the existing evidence on gender and entrepreneurship comes from case studies which, although insightful, use very small samples and are difficult to generalise.

"Women are better leaders than men amongst the VLE groups. ...Women are always at home while men go off doing different activities. ...So women are always available whenever clients come and since women do not like to go far from their homes they are better in leadership positions."

Marcella Uwizeyimana (female VLE, Mavumba villages)

Key findings from the scoping phase:

The research team has had the opportunity to visit field sites several times, including to currently active VLEs. These visits have provided interesting insights into gender dynamics and the appetite amongst women to participate as VLEs. They also enabled us to identify three potential threats to the study – as well as mechanisms to ameliorate their effects.

First, social or cultural barriers could prevent women from becoming VLEs. For instance, despite their excitement during village and sector-level presentations on forming microenterprises, men with senior roles in the village tend to end up running such enterprises. To circumvent this problem, in the presentations in the pilot villages, the recruitment of female VLEs was explicitly sought. As a result, gender randomisation has been successful in nine pilot villages.

Second, there is the concern that, due to a historical process of discrimination in many dimensions, women may lack the skills to run a business; or rather they may feel they lack the skills. Here, statistical analysis of our



Key messages

Women are interested in becoming Village Level Entrepreneurs but social, cultural and historical aspects can hinder their actual participation. Measures to address these aspects should be embedded in energy projects from their inception.

implementing partner's administrative data shows that female entrepreneurs perform at least as well as their male counterparts.

Third, several studies and our qualitative research highlight the importance of not alienating entrepreneurs' husbands and children. Husbands were invited to attend the meetings so they could clearly understand the intervention's requirements as well as its expected benefits. This was done to avoid husbands seeing the intervention as competing for their wife's time and attention, and even for the household's economic resources, perceptions that could lead them to actively oppose the intervention. The husbands' role in supporting their wives and the fact that their wives, and not them, would be the VLEs was highlighted. Evidence that the husbands view the intervention positively is seen in the fact that collecting the commitment fee, of approximately US\$13 per VLE, has not been a problem in our pilot villages.

As part of the scoping phase, we reached out to local researchers to listen to their experiences with gendered programming in Rwanda. We talked with Edward Katwaza, a gender economist with the Centre for Gender Studies, College of Arts and Social Science, University of Rwanda. Edward holds a Master of Arts in Gender Analysis and Economics from Makerere University and a Bachelor's Degree in Economics from the University of Rwanda.

1. In your view, what is the general attitude of policymakers in Rwanda towards gender research that puts women at the forefront of programme interventions?

Having dealt directly with policymakers in Rwanda, I can tell you that, at the policy level, there is a will to make programmes gender-aware – to mainstream gender at all levels. For instance, Rwanda is a signatory of CEDAW, the Beijing platforms and other UN conventions.

The will is there, but there are also problems. The general attitude is that gender needs to be a cross-cutting issue, but there are two main problems. First, despite this willingness, we don't really

know how to mainstream gender; and, second, gender is only seen as a women's issue, and men are excluded. It is important that policies and programmes relate to both males and females. In addition, at times, the concept of gender is just thrown into a programme. It is added at the last minute, but it needs to be incorporated right from a programme's inception.

Finally, there is also a gap between the intention and the implementation, so we need to engage policymakers in training sessions.

2. What types of social barriers do you think women in local communities face when starting a business?

Cultural perceptions make men feel superior to women. As a consequence of these perceptions, other barriers emerge. For instance, women are not trained to start businesses, and this affects female agency – their ability to take initiatives. Women seem reluctant to take the initiative or to take the risk of starting a business and, as I said, this mainly stems from cultural and traditional barriers.

There are constraints on women's mobility, but there is also their overwhelming engagement in unpaid tasks: childcare, community care, family engagements, weddings and holiday events, and taking care of all these tasks doesn't leave women time to engage in business.

Cultural barriers generate economic barriers as well. Until recently, women in Rwanda could not inherit, so they lack assets. Laws to change this are now in place but they are not yet fully applied.

3. In this study, we will specifically select women to lead female microenterprise groups. As the energy sector is stereotypically considered a male industry, in what ways do you see this project as an opportunity to change perceptions about gender participation in various industries?

If women are trained, your study will show that they can do the work as well as men. If women can manage in that sector, they can become role models and show to other women that there are opportunities to manage in other sectors as well.

It is vital that the business training stresses the issue of gender dynamics within the household, aiming to change the perception that women cannot be entrepreneurs. A common mistake in women's empowerment programmes is advocating for women at the expense of men, and not dealing with gender relations: it is absolutely essential to teach gender relations as part of empowerment training! Not only the woman, but also her husband and children, need the training.

4. What do you think the main impact of having female microenterprises will be on youth in the households and communities of the female microentrepreneurs?

I think having female micro-entrepreneurs as role models will ease the social constraints and preconceived biases against females. Children will look at these female entrepreneurs and see opportunities they can aspire to. They will see things can change.

...and on the female entrepreneurs themselves?

They will realise that, within themselves, they have the skills necessary to succeed in business.

Keywords

gender empowerment; female entrepreneurs; clean energy; Rwanda

Research area

RA 5: The role of the private sector in scaling up energy access

Research team

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ENERGIA's Gender Approaches: Learning from Experience

Joy Clancy and Nthabi Mohlakoana

For more than twenty years, the ENERGIA network has been building a substantial body of experience with gender mainstreaming in the energy sector. The approach ENERGIA uses is summarised in Box 1. ENERGIA's International Secretariat considers this to be an appropriate moment to document this work in a systematic way that can then be used to inform the future work of ENERGIA, its network members and partners and, most importantly, other energy sector players. To achieve this, ENERGIA commissioned research by a small team with the objective of bringing together lessons learnt from gender approaches adopted by ENERGIA and other organisations. The ultimate goals are to increase ENERGIA's effectiveness, to enhance ENERGIA's role in setting the stage for other organisations and to inform policy development and practice about successful gender mainstreaming approaches. The research will also provide input to the research teams in the Gender and Energy Research Programme funded by the UK's Department for International Development (DFID).

The two main gender approaches that the research team focused on are gender mainstreaming (GM) and gender auditing of energy policies and projects. These approaches have been widely used by ENERGIA in a range of projects and programmes in its networks in a number of countries in Asia and Africa. In this research, only activities between 2005 and 2011 were reviewed, covering Phases 3 and 4 of ENERGIA's programme of activities. The year 2005 was significant for ENERGIA in that it marked the beginning of the TIE ENERGIA project¹ that had the goal of ensuring that gender is integrated into energy access by strengthening the human and institutional capacity in 12 African countries. ENERGIA's methodology for gender audits was developed as part of this project. Given that this is an approach that ENERGIA has been closely identified with, and that has been implemented in a significant number of countries, it is analysed separately. The year 2011 marked the end of ENERGIA's Phase 4 programme that had concentrated on mainstreaming gender in energy projects.

We focused on gathering data in three countries (Kenya, Nepal and Senegal) through in-depth interviewing methods and supplemented this with data from Philippines, Sri Lanka, Botswana and Tanzania collected through a written survey. Interviews were held with individuals and organisations that have partnered ENERGIA and/or ENERGIA's National Focal Points in

BOX 1: Definition of ENERGIA's gender approach

ENERGIA sees its approach to mainstreaming gender in energy projects as a process of helping energy projects and their stakeholders:

- To identify gender issues in an energy project through the use of practical tools
- To agree on gender goals that the project wants to achieve
- To develop a strategy and action plan for how these gender goals can be met
- To successfully implement gender-focussed activities in their projects
- To institutionalise gender mainstreaming capacity within the project and its partners
- To track the performance of the project in terms of its implementation, impacts and institutionalisation of gender issues (Cecelski and Dutta, 2011).

This definition was further elaborated in the Call for Expression of Interest for the DFID/ENERGIA Research Programme as an approach that not only analyses the differential impacts of proposed energy interventions on women and on men but also gives:

- full recognition to women's and men's different needs for energy based on consultations that consciously seek advice from both women and men;
- recognition of the potential of women and men to participate in energy supply; and
- recognition of the need to tackle institutional barriers that limit women's participation in energy planning and production, and in their access to energy for a variety of end-uses.

We view the basis of a gender approach to be the use of gender analysis and asking questions in relation to women and men, hence avoiding neutral terms such as 'household', 'people' and 'communities'. A gender approach involves taking action to change policies, institutions and projects so that they actively promote gender equality.



Working group during Gender Action Plan workshop in Tanzania, July 2010 (Photo: ENERGIA)

these countries during the relevant period. Additional interviews have been held with a range of ENERGIA's project partners as well as with staff from World Bank's Africa Renewable Energy and Access programme (AFREA) and the Asian Development Bank (ADB).

Gender tools and methods

Over the years, ENERGIA has used a number of tools and methods in working with partners in the various countries. During our data collection process, we distinguished the following: (i) Gender Action Plans (GAPs), (ii) Capacity building, (iii) Advocacy and (iv) Gender audits. Based on the information we have collected and analysed for this study, we discuss each approach below through the experiences of some of ENERGIA's National Focal Points and their partners.

One of the tools that ENERGIA uses to mainstream gender in projects is the Gender Action Plan (GAP). A GAP is a document that articulates what a project wants to achieve, from a gender standpoint, what activities it will undertake towards this, and how it will monitor its progress. Nearly all of the projects we have reviewed included a GAP as one of their outputs. While we are currently gathering more detailed data, the general reaction has been positive. A GAP is considered to help in achieving objectives. Sustainable Community Development Services (SCODE), an organisation concerned with renewable and sustainable energy solutions for low-income households in Kenya, is an example of one of the organisations that, once they have used a GAP in an ENERGIA project, have gone on to mainstream the tool as standard practice within their organisation and apply it in other projects.

Capacity building has been one of the core activities. Several respondents who have been involved in training

courses, or in projects that have used ENERGIA's GM approaches, have cited examples of projects in which they have continued to use these approaches. Respondents now have a better understanding of the concept of gender. There are examples where organisations have built their gender competence by partnering with ENERGIA, and this has allowed them to win contracts they consider they would not have won without this capacity building.

One of the well-received outputs of ENERGIA's capacity building efforts is the document "Mainstreaming Gender in Energy Projects: A Practical Handbook". The handbook was developed in collaboration with 20 medium- to large-scale energy access projects in Africa and Asia, a number of whose partners have become ENERGIA focal points or have become project partners. Typical responses from respondents who have used the handbook are: "it helped me organise my thinking and didn't take time to put in place" and "it is practical and very clear on how to mainstream gender in projects". A number of respondents cited Advocacy as one of ENERGIA's strengths. ENERGIA is seen as able to make issues visible and then bring them to the international table. One respondent summarised ENERGIA's approach at the country level as "giving ownership to processes, and working in a transparent, participatory and consensus-building manner that inspires people to take up gender issues".

Gender audits

The mainstreaming approach of gender audits was developed by ENERGIA during Phase 3 when the network was interested in developing tools and approaches for mainstreaming gender in energy policy. This approach was developed as an alternative to gender budgets, which were being used by feminist



Participants in Gender Mainstreaming Workshop at UNDP Cambodia, March 2011 (Photo: ENERZIA)

economists to provide a mechanism for assessing the impact of government revenue and expenditure on women, men, girls and boys. While this was a powerful tool, the skills and knowledge required to understand government budgets are beyond many citizens and therefore the tool is not very inclusive. This lack of inclusivity and the failure to reach the grassroots was at odds with ENERZIA's general mainstreaming approach, and hence the use of gender audits with participatory methods for data collection and gender analysis by key stakeholders in the energy sector, including ministries and utilities. Initially there were audits in Botswana, Kenya and Senegal. In Phase 4, further audits were conducted in other African countries (Ghana, Zambia, Lesotho and Nigeria) as well as in Asian countries (India, Philippines and Pakistan). A handbook on how to conduct an audit has been developed (<http://bit.ly/25b3BMn>).

We have been able to identify a number of changes in energy policies as a consequence of the audits. For example, in Kenya, the 2004 energy policy had very few sentences on gender mainstreaming, whereas the revised policy in 2011 incorporated gender issues. Uganda now has references to women in its energy policy, albeit only in the component related to renewables. Similarly in Senegal, the Renewable Energy Policy includes women as a target group which is linked to a member of the audit team becoming the minister responsible for renewable energy. The Uganda Bureau of Statistics is now expected to collect sex-disaggregated data for the energy sector linked to sustainable energy. In Botswana, the Ministry of Energy has carried out a survey on demand-side management

in which questions were asked on energy use in households by gender.

We have conducted a stakeholder analysis in which ENERZIA's National Focal Points in three focus countries (Kenya, Nepal and Senegal) have been analysed to identify the types of stakeholders they associate with, and how influential these stakeholders are in mainstreaming gender in energy policy processes and outcomes. This will enable us to identify which gender approaches work best with which stakeholder, as well as whether there are gaps in engaging with stakeholders that demand new strategies.

Preliminary conclusion

Although we have still to complete the analysis, we can say that ENERZIA's gender approaches are successful in the sense that they are adopted by ENERZIA's partner organisations once they have used the tools and seen the benefits they bring in helping projects meet their objectives. These approaches have evolved over time as interest in and experience with gender in the energy sector have grown. This mirrors one of the aims of this piece of work: to identify the need for new directions and new methods.

Acknowledgement

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News from the Secretariat

Greetings!

Wesaluteyoufromournewhomebase.OnMarch1,2016,Hivos(HumanistInstituteforCooperationwithDevelopingCountries)becamethelegalhostofENERGIA.ENERGIAandHivoshavebeenlongstandingpartners.BothpartiesseegreataddedvalueinhavingENERGIAintegratedwithinHivos.Ourdeepunderstandingof,andinvolvementin,genderandenergyapproaches to development aligns very well with Hivos, which also has energy as one of its core themes. Our experience in combining implementing programmes on the ground with advocacy and a targeted research programme makes the network an ideal addition to Hivos, an international organisation that seeks new solutions to persistent global issues.

In 1999, ENERGIA was first hosted by ETC Foundation, a non-profit organisation working worldwide in support of people-centred development. However, over the past two years, ETC has undergone a drastic transition process that required its Board of Trustees to wind down operations. As a result, we had to find a new host for our International Secretariat, which we found in Hivos. By hosting the International Secretariat, Hivos takes over the legal and fiduciary framework under which our programmes are funded, managed and implemented. Hivos has also become the formal employer of the ENERGIA International Secretariat staff, and is now responsible for quality control and the proper implementation of our programmes and

management. This new structure provides us with a solid base to operate from while, at the same time, we retain our independence.

We have received a very warm welcome from our new Hivos colleagues and are excited to be working with them!

Ensuring clean cooking indicators in Sustainable Development Goals (SDGs)

ENERGIA and the Global Alliance for Clean Cookstoves have advocated for the accurate inclusion of cooking energy — a particularly important issue for women in the developing world — throughout the SDG indicator framework. To track progress, we have together recommended indicators under SDG 3 on health, SDG 5 on gender and women’s empowerment and SDG 7 on energy access. Our inputs have helped shape the current draft indicator framework. We support the indicators on air pollution, on unpaid work and on clean cooking that are currently in the draft framework and categorized as “Green,” meaning that they have broad agreement and are well established. It is imperative that these indicators remain in the SDG measurement framework and that expanding energy access and reducing air pollution remain priorities throughout implementation.

Data disaggregation

The Alliance and ENERGIA support the current level of disaggregation in the draft indicator framework and

Figure 1: Clean cooking indicators for SDGs 3, 5 & 7

Sustainable Development Goal	Target	Indicator as established by ENERGIA and the Alliance
	<p>3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and from air, water and soil pollution and contamination</p>	<p>Mortality rate attributed to household and ambient air pollution</p>
	<p>5.4: Recognise and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as appropriate nationally</p>	<p>Percentage of time spent on unpaid domestic and care work, disaggregated by sex, age and location</p>
	<p>7.1: By 2030, ensure universal access to affordable, reliable and modern energy services</p>	<p>Percentage of population with primary reliance on clean fuels and technology</p>

urge stakeholders to ensure that disaggregation remains included and a priority throughout measurement, follow up, and review. The draft document currently states that indicators “should be disaggregated, where relevant, by income, sex, age, race, ethnicity, migratory status, disability and geographic location, or other characteristics, in accordance with the Fundamental Principles of Official Statistics.”

Women’s Economic Empowerment (WE)

Our Women’s Economic Empowerment programme (WE) is now in its second operational year. WE promotes access to clean energy technologies and fuels for poor rural populations by supporting over 3,000 women’s micro- and small energy enterprises. The Programme is building their capacities through business development support, technical training and assistance, and hand-held mentoring support. To accomplish this, we work together with nine partners in seven countries (see Figure 1).

So far, programme activities have focused on understanding the ground-level challenges in working with women energy entrepreneurs, and fine-tuning strategies for up-scaling the business models used in the programme countries. This included the finalisation of institutional arrangements and partnerships; community mobilisation and the recruitment of women entrepreneurs; capacity building and mentoring; finance facilitation, and marketing and distribution.

Governments, both national and local and the private sector have shown interest in the WE approach to providing energy access. This has resulted in multiple partnerships, further scaling up the delivery of energy products and services. Here is a good example of such partnership:

Energy Giant TOTAL and women entrepreneurs join forces

In Senegal, the national electricity access rate is 57%, in rural areas just 27%. In the regions of Tambacounda and Kedougou, in eastern Senegal, where ENERGIA is working with local partner GVEP, the access percentages are just 9% and 4%. Delivery of off-grid solar products is therefore critical to improving the livelihoods of people within these communities. GVEP is supporting women entrepreneurs to do this, in collaboration with TOTAL.

The problem: Reaching beyond filling stations

TOTAL is the sole importer of *d.light* products into Senegal. GVEP thought it would be good to work TOTAL because it has a Corporate Social Responsibility (CSR) objective to deliver solar products to the last mile. However, while TOTAL is able to deliver the products to their filling stations, it has proven hard to move them beyond that. The products have been piling up in storage and TOTAL had not been reaching their target market. GVEP saw this as an opportunity

for the network of women entrepreneurs to expand their businesses.

When GVEP first approached TOTAL and informed them that they were working with women entrepreneurs running businesses at the last mile who were eager to sell off-grid solar products, TOTAL did not initially understand who these women entrepreneurs were, and thought it too great a risk to engage with them. This is where the WE programme came in.

A win-win collaboration

Through the WE programme, GVEP and TOTAL signed a Memorandum of Understanding with the objective of accelerating the deployment of solar energy products. As a consequence, 36,000 solar lanterns, some of them with a phone-charging facility, are being sold by 150 groups of women entrepreneurs – each group consisting of 20 to 50 women – in 344 rural villages in Tambacounda and Kedougou. The women pay, as a group, 25% of the product costs up-front and have the option to repay the balance of the purchased price in 60 days. GVEP facilitates these sales on credit terms through a loan guarantee fund that guarantees payment of the remaining 75% of the purchase price. Thus, in the event of a default (and there have not been any!), TOTAL has the assurance that the risk is mitigated.

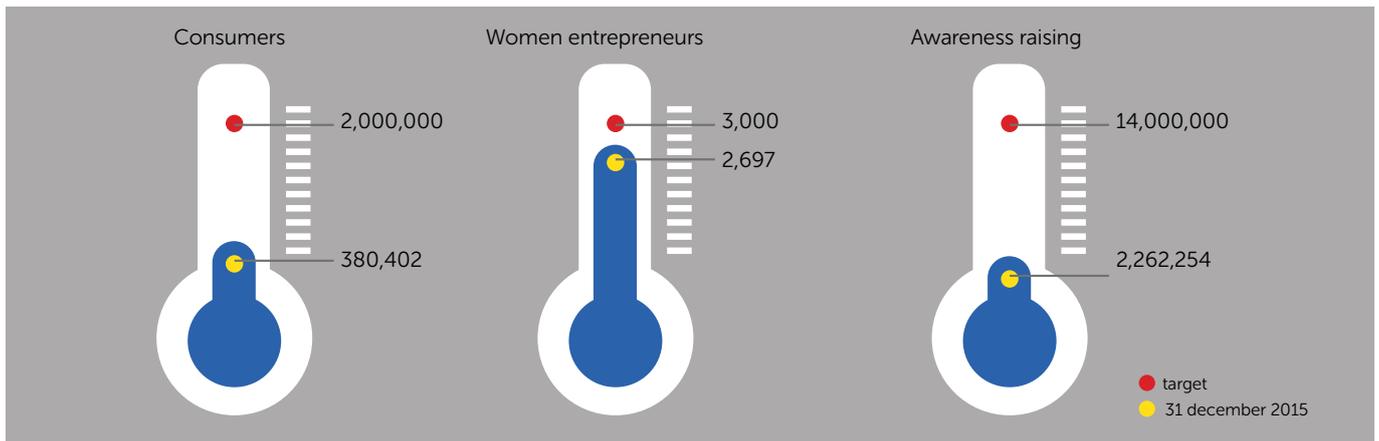
Another advantage is that, since TOTAL is already transporting products to Tambacounda and Kedougou, the women entrepreneurs are able to piggyback on their distribution chain and reduce transportation costs. This makes the price that the women are able to sell the solar products for much more competitive. Thus, although the starting point is 36,000 units, it is very likely that this will grow exponentially. This is a win-win collaboration: It works for TOTAL and it works for the women who are running credible businesses.

Gender and Energy Advocacy programme

Lobby and advocacy efforts to include gender objectives in SE4All countries’ action plans and investment prospectuses are diverse and ongoing in the programme countries (Indonesia, Kenya, Nepal, Senegal and Tanzania). The same is true for general awareness-raising campaigns on the close links between gender, energy and women’s economic empowerment in these countries. Our partners in the Gender and Advocacy programme are the same as in the Women’s Economic Empowerment programme, complemented by organisations focused on media and public campaigning. Here are only a few examples of the great work they are doing and successes they have had.

Kopernik started a national twitter campaign – #IDwomen4energy – in Indonesia, running from October until December 2015. The aim of the campaign was to build a social movement to engage decision makers in improving regulations, policies and programmes as well

Figure 2: Impact



as to raise awareness among the general public about the benefits of energy access for women. The campaign has exceeded the target of reaching 450,000 people. Coverage by mass media alone had a total reach of up to 7 million. The social media activities, including competitions and content sharing, reached 86,000 people with over 17,000 interactions.

In their lobby and advocacy efforts, Kopernik was able to mobilise fifty CSOs to become involved in the CSO alliance to revive the SE4All process in Indonesia.

In Kenya, the partner Practical Action focused mainly on lobbying for the mainstreaming of gender and pro-poor objectives in the implementation of the SE4All process resulting in the inclusion of gender and pro-poor targets in the final drafts of the SE4All Action Agenda and Investment Prospectus. This was possible through direct and regular participation of Practical Action in the SE4All Technical Team charged with overseeing the development of the documents.

Other activities include a Solar Sister’s WE Shine campaign to shed light on the impact an entrepreneur makes with affordable lights and clean cookstoves. In Senegal, GVEP advocates fiercely for the inclusion of gender in the energy gap analysis on the national and regional levels. (ECOWAS¹/ECREE²) participates in several working groups and task forces. CRT in Nepal, in turn, focuses its awareness-raising activities on the district level, with CREEs (Rural Electrification Entities), local governments and schools.

Empowerment journeys

In our WE programme, over 2,000 women embarked on a journey to become successful micro- and small business owners, energy service providers and even leaders in their communities. At least a thousand more will join over the course of time. Their journey is an exciting, though not necessarily an easy, one. It takes time to overcome challenges and learn from mistakes. The WE programme travels with them, providing training, technical advice and hand-held support.

In their empowerment journeys, ten of these women are followed on their road to success. How did it all start? What are their hopes, dreams and fears? What challenges do they encounter and how do they face these? Their stories are being told through their own eyes and those around them, including through interviews, videos and photographs. You find them on: www.energia.org/empowerment-journeys.

Join ten women on their empowerment journey and hear what they have to say about the opportunities, successes, challenges and impacts of being an energy providing entrepreneur
www.energia.org/empowerment-journeys

Notes

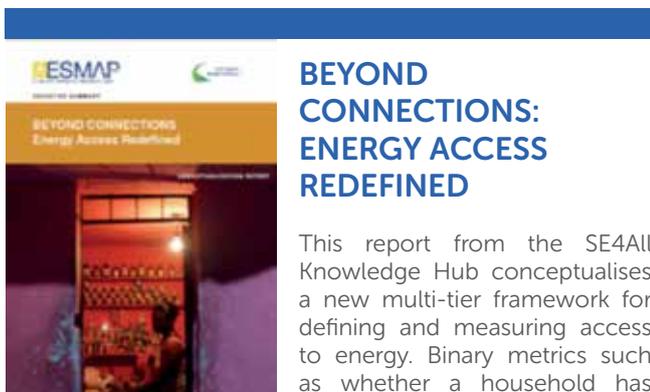
¹Economic Community of West African States

²ECOWAS Centee for Renewable Energy and Energy Efficiency

Partners in the Women’s Economic Empowerment and Gender and Energy Advocacy Programmes:



Resources & Upcoming events

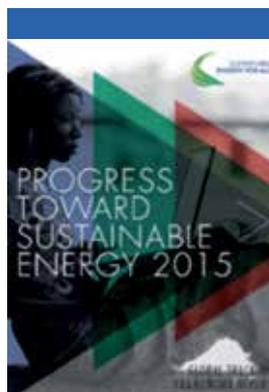


BEYOND CONNECTIONS: ENERGY ACCESS REDEFINED

This report from the SE4All Knowledge Hub conceptualises a new multi-tier framework for defining and measuring access to energy. Binary metrics such as whether a household has an electricity connection, and

whether a household cooks with non-solid fuels, do not help us understand the phenomenon of expanding energy access and how it impacts on socioeconomic development. This report heralds a new definition and metric for energy access that is broader in that it covers energy for households, productive engagements and community facilities, and focuses on the quality of energy being accessed.

<http://bit.ly/1SMQ33S>

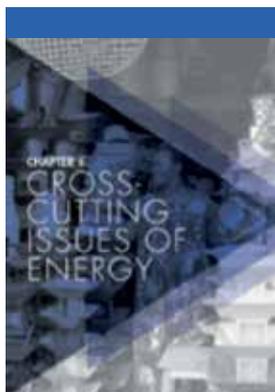


PROGRESS TOWARD SUSTAINABLE ENERGY 2015

SE4All's first Global Tracking Framework (GTF) in 2013, produced by energy experts from 15 agencies under the leadership of the World Bank and the International Energy Agency (IEA), provided a monitoring system to track progress towards

reaching the SE4All targets of ensuring universal access to modern energy services, doubling the global rate of improvements in energy efficiency and doubling the share of renewable energy in the world's energy mix by 2030. The second edition 'Progress toward sustainable energy 2015' (GTF2015), provides an update on how the world has been moving towards the three objectives, assesses whether progress has been fast enough and sheds light on the underlying drivers of progress.

<http://bit.ly/1F2ca3r>



PROGRESS TOWARD SUSTAINABLE ENERGY 2015, CHAPTER 6

The GTF 2015 also explores a number of complementary themes. It includes a new chapter – Chapter 6 – that provides the essential context on the complex links between energy and four other key development areas: food, water, health and gender.

Event	Date	Place
Asia Clean energy Forum	6 – 10 June 2016	Manilla, The Philippines
Ashden Awards	9 June 2016	London, UK
2016 African Inclusive Infrastructure Forum	9 – 10 June 2016	Johannesburg, South Africa
Webinar Series GACC: How to viably market and distribute beneficial product to the base of the pyramid	22, 29 June, 6 July 2016	Online participation
Clean Cooking Energy Expo and Conference	20 September 2016	Nigeria
World Energy Congress	9 – 13 October 2016	Istanbul, Turkey
COP 22	7 – 18 November 2016 12 December 2016	Marrakesh, Morocco
International workshop gender and energy research: Empowerment from electricity	12 December 2016	New Delhi, India

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