BEST PRACTICES in Accelerating Access to Household Energy

A collection of evidence from wPOWER’s partners

September 2018
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Acknowledgment

This report relied on input and information from wPOWER partners in developing the case studies. Presented evidence and information is based on literature reviews, in-depth interviews, and knowledge sharing from wPOWER strategic partners. We are grateful to all partners for their valuable input and comments which helped in the preparation of this report.

“wPOWER is leading the way in raising the visibility and prominence of organizations driving women’s economic empowerment through clean energy access”

Wanjira Mathai
Our aim in publishing this report is to support all those involved in increasing access to clean cooking and lighting energy at the household level. Globally 1.3 billion people do not have access to electricity and 2.7 billion people still rely on inefficient and dangerous solid fuels to meet their daily needs. Many governments and organizations are working to solve this problem.

This report is a summary of best practice guidance from leading organizations that have been a part of the Partnership on Women’s Entrepreneurship (wPOWER) since 2013. To write this publication, we engaged 35 partner contributions from a multidisciplinary and regionally diverse group of implementers. We hope that our approach has made these evidence-based best practices unique and useful.

We recognize that different regions have different practices and traditions and that one size does not necessarily fit all and the principles must be contextualized. The case studies highlight wPOWER’s 8 Best Practice Principles and approaches that have been implemented and proven, through experience, to produce desired outcomes. They are therefore recommended for replication by other players in the clean energy acceleration sector. Generously, each partner case study also highlights key lessons learned from their engagements.

Onwards!

Linda Davis, Ph.D.
Strategic Partnerships Director, wPOWER
Foreword

Integrating women in clean energy entrepreneurship and promoting the role that women must play across the energy value chain has been identified as a key strategy to enhance adoption of clean energy technologies among households in rural areas.

Although sector players acknowledge that the role of women in increasing adoption of clean energy technologies can no longer be ignored, these wPOWER partner organizations have in the past worked independently of each other, with each organization following their own unique practices in engaging women in clean energy initiatives.

Working in the renewable energy sector has been an exciting experience for me and I find it imperative to always seek result-based solutions to sustainable energy. In this regard, case studies highlighted in this publication, showcase concrete work carried out by our wPOWER partners. It is anticipated that the specific techniques and procedures used by partners in implementing these practices can be replicated by more organizations in the sector to scale up most effective approaches in increasing adoption of clean energy in both urban rural communities; capturing and disseminating best practices and evidence that make the business case for women's involvement; and minimizing replication of ineffective efforts.

I would like to extend my gratitude and appreciation to all partners who contributed to the success of this publication.

Simon Kiragu
Strategic Partnerships Manager, wPOWER
Acronyms and Abbreviations

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<td>AfDB</td>
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<td>BoP</td>
<td>Base of the Pyramid</td>
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<td>CSO</td>
<td>Civil Society Organisation</td>
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<td>GACC</td>
<td>Global Alliance for Clean Cookstoves</td>
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<td>DRE</td>
<td>Distributed Renewable Energy</td>
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<td>GBM</td>
<td>Green Belt Movement</td>
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<td>GDI</td>
<td>Global Development Incubator</td>
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<td>GSMA</td>
<td>GSMA Group Speciale Mobile Association</td>
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<td>ICRAF</td>
<td>World Agroforestry Centre (International Centre for Research in Agroforestry)</td>
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<td>ICRW</td>
<td>International Centre for Research on Women</td>
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<td>IFC</td>
<td>International Finance Corporation</td>
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<td>JHU</td>
<td>John Hopkins University</td>
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<td>MFI</td>
<td>Micro Finance Institution</td>
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<td>NGO</td>
<td>Non Governmental Organisation</td>
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<td>SACCO</td>
<td>Savings And Credit Co-Operative</td>
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<td>SME</td>
<td>Small and Medium Enterprise</td>
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<td>SGB</td>
<td>Small and Growing Business</td>
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<td>SSP</td>
<td>Swayam Shikshan Pravag</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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Executive summary

This report is to document evidence-based best practices in the acceleration to household clean energy access, and to highlight the involvement of women across the clean energy value chain.

Energy poverty affects men and women differently, with gender inequalities playing a significant role on the capacity of women to accumulate resources through value added economic activities (Ramani & Heijndermans, 2003). A clear nexus between energy access and women’s poverty is widely documented, as women’s needs for energy have a practical, productive and strategic impact on their lives, and by extension the lives of the communities.

These gender inequalities mean that women generally have less access to productivity-enhancing resources, such as labor, collateral, credit facilities, information, and training. These inequalities stem from household based discrimination and from broader societal and cultural constraints. Across countries, women lead mostly informal businesses and often the attention is focused on micro enterprises and community cooperatives rather than on scaling up women’s entrepreneurship.

While many studies looked at women and entrepreneurship, a smaller body of research explores the role of women in facilitating energy access, as clean energy entrepreneurs and as agents of change in their communities.

Distributed Renewable Energy (DRE) systems offer a great opportunity for women to participate in decision-making, as these are deployed at the local level where women are more likely to be involved in energy procurement, design, installation, maintenance and consumption.

The scope of this publication is to highlight best practices, lessons learned and key measures to be implemented for accelerating energy access through women’s involvement in the clean energy value chain.

The report highlights the solutions implemented by 34 wPOWER’s partner organizations who are working to close the last mile gap between energy access, women’s empowerment and entrepreneurship.

While these organizations tackle global challenges such as reducing indoor pollution through clean cooking stoves, or ensuring solar technologies’ affordability through flexible payment options, the implemented solutions are often context specific. By linking global problems to country-focused interventions, insights can be drawn to understand what critical factors could be potentially replicated in other parts of the world where similar problems occur.

When women are strategically positioned as agents of change, rather than recipients of support, community development sustains beyond project investments.

Women’s Earth Alliance

Each case study sheds light on the challenges tackled and how these organizations are implementing innovative solutions at every level of the renewable energy value chain: from manufacturing high quality and efficient products, to establishing last-mile distribution networks, offering financing, and supporting policy changes and awareness in this sector.

wPOWER partner organizations have shared important lessons learned from working with customers, with women entrepreneurs and with policy makers. Their contributions have been used to support the argument for involving women as key changemakers in this sector, moving away from their role as beneficiaries and steering towards a sustainable, women-led energy revolution.
Introduction

A significant barrier to women’s participation in the energy value chain is represented by the negative cultural attitudes towards women running businesses (ENERGIA, 2016). As a result, many organizations continue to put off the idea of engaging women across the value chain. Unfortunately, the slow adoption of clean energy products has been linked to the implementation of ineffective practices such as ignoring the role of women in promoting adoption of clean energy technology. In order to change these attitudes and increase the chances of more women engaging in the value chain, there is a need to showcase best practices which are evidence-based and which highlight the positive impact of involving women at different levels of the value chain. The evidence is finally here!

Based on case studies of 34 wPOWER partner organizations, this report highlights essential measures taken by these organizations to accelerate adoption of household clean energy. The organizations highlighted have broken cultural barriers by moving the status of women from vulnerable onlookers to key stakeholders, decision makers and agents of change. These case studies also provide proof on validity of research evidence that has shown positive returns for organizations that empower women and retain them as employees (McKinsey 2010). Further, women’s involvement in the clean energy industry enables energy companies to produce products and services that are better targeted to female customers and helps to sell to female customers in hard-to-reach locations (Reiss, 2015).

The 8 Best Practice Principles as distilled by wPOWER summarize specific actions that organizations in clean energy sector can adopt to scale up their clean energy activities and realize clean energy goals.

The best practices provide a brief review of principles that underscore success in clean energy which are implemented by partners but poorly documented. This review provides a basis about what is known in the field, whereas the case study collection will support this evidence review with practical lessons learnt from wPOWER’s partners.

The 8 principles are:

1. Focus of women as change agents.
2. Community presence that are physical locations to build trust within neighbourhoods.
3. Product availability through established distribution chains to prevent stock outs.
4. Quality certified products that meet international standards and that they are sold with after-sales services and warranties or provided on a full-inclusive service basis.
5. Access to finance ensuring that customers are able to afford these products, and at the same time, that entrepreneurs have access to funds to meet both investment and recurring costs.
6. Coaching and mentorship beyond training to ensure business sustainability.
7. Women networks is vital in increasing awareness and adoption of clean energy alternatives and promoting financial independence through micro enterprises.
8. Technology innovation in integration of emerging trends to scale adoption.

Each case study presents a detailed description of how the organization is integrating the above principles in solution-focused clean energy innovations and entrepreneurship.

The Evidence Proof Points are the measures that are recommended to accelerate both household energy uptake and tackle the barriers women face in getting involved in the energy value chain. The evidence proof points are:

1. Awareness of entrepreneur opportunities and household energy alternatives
2. Accessible entrepreneurship opportunities and clean energy products
3. Affordable capital for entrepreneurs and flexible pay options
4. Aspirational entrepreneurship opportunities providing a dignified livelihood
5. Agency to address cultural barriers for women entrepreneurs
6. Advocacy to support clean energy policies
7. Association across women’s networks at all income levels
8. Acceptable products that consider cultural preferences
wPOWER Hub: mission and activities

The Partnership on Women’s Entrepreneurship in Renewables (wPOWER) is a U.S. Department of State-funded project, with a mission to promote the central role that women must play in clean energy entrepreneurship and in addressing climate change. wPOWER has a vision to empower 8,000 women in clean energy entrepreneurship and deliver clean energy access to 3.5 million people globally by 2018.

Partnership Principles

**Common interest** in the overall goals of developing women entrepreneurs in clean energy to address energy poverty and climate change.

**Recognition** of the long term benefits and value add in working jointly with a partner to achieve specific outcomes

**Single mindedness** of purpose, bearing in mind the comparative advantages of the partners involved

**Formal engagement** through an expression of interest followed by a Memorandum of Understanding

Partnership Reach

- **Australia** (2)
  - New South Wales: Barefoot Power
  - Melbourne: Pollinate Energy

- **France** (2)
  - Grenoble: GATE Impact Fund
  - Meyreuil: Synergie Solaire

- **Germany** (1)
  - Berlin: SOLARJOBS

- **India** (4)
  - Pune: Swayam Shikshan Prayog (SSP)
  - Mumbai: Oorja Solutions
  - Rajasthan: Barefoot College, Frontier Market
  - Bangalore: Barefoot College, Frontier Market

- **Ivory Coast** (1)
  - Abidjan: African Development Bank

- **Kenya** (5)
  - Montaza: Sohekk Kenya

- **Nepal** (1)
  - Kathmandu: Empower Generation

- **The Netherlands** (2)
  - The Hague: EMERGIA, Hivos

- **Uganda** (2)
  - Kampala: Solar Sister, EnvVenture

- **United Kingdom** (4)
  - London: Energy 4 Impact, Cherie Blair Foundation for Women
  - Warwickshire: Practical Action
  - Kent: Value for Women

- **USA** (12)
  - Washington DC: Department of State, Global Alliance for Clean Cookstoves, Women for Women Intl, Global Development Incubator, International Lifeline Fund
  - Baltimore, MD: Johns Hopkins University
  - Gettysburg, PA: Project Gaia
  - University Park, PA: Penn State College of Agricultural Sciences
  - Berkley, CA: Women’s Earth Alliance
  - Oakland, CA: Standard Microgrid
  - Fort Collins, CO: Enervend
  - San Francisco, CA: Power For All
**Partnership Profiles**

**Technology**
Partners who primarily focus on the design and manufacturing of clean energy products: BURN Manufacturing, Envirofit, Oorja, Barefoot Power, Sollatek Kenya

**Funding**
Partners who focus on enabling access to finance: Synergie Solaire, Gaia Impact Fund, African Development Bank Group, Global Development Incubator

**Advocacy**

**Implementation**

**Research**
Partners who focus on producing and disseminating research: Value for Women, ENERGIA, John Hopkins University, Penn State College, Hivos, World Agroforestry Centre

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**Icons used in this publication**
- **Electricity (including household, productive uses)**
- **Energy for cooking**
- **Look out for this icon for best practices highlighted in the case studies**
Championing best practices

An evidence review supported by lessons learned from wPOWER’s partners

The 8 principles are:

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7. Women networks is vital in increasing awareness and adoption of clean energy alternatives and promoting financial independence through micro enterprises.
8. Technology innovation in integration of emerging trends to scale adoption.
Focus on women

Women workers constitute 40% of the world’s workforce, although in the energy sector only 25% of workers are women. According to USAID (2016), women make up an estimated 13% of the utilities workforce in Eastern Europe, the Middle East and Africa. Case studies, research reports, and investment reports demonstrate that gender diversity can drive up productivity and innovation, and employing women can enhance a company’s relations with local communities (IFC, 2013).

Practical Action Eastern Africa

Uptake of products sold to women is higher when women entrepreneurs are involved. Improving income of women translates into an increased investment in family and their wellbeing, creating stronger, happier and more independent family units.

Research shows that gender inclusion in organization is good for business and female employees, managers and executives can serve untapped female consumer markets. A 2010 McKinsey's survey of companies that invest in programs targeting women in emerging and developing markets found that 34% of companies reported increased profits and a further 38% were expecting positive returns. Similarly a study by Ernst & Young (EY, 2016) analyzed gender diversity in the boardrooms of the world’s largest energy utilities, and found that those with more women in their boards were linked to improved business performance by 14.8%. Research also shows that companies with women’s representation outperform those without it. In addition, when women earn an income they reinvest 90% of this income in their families, compared to men who invest only 30-40% (Oak Foundation, ICRW, Dalberg, Witter Ventures, 2014).

Focusing on women to accelerate access to energy can be done at different levels. Practices to involve women can be categorized as: gender mainstreaming at the program design stage for energy projects, gender audits/reviews of policies, and involving women at several stages of the renewable energy supply chain. For example, women can be involved in producing and marketing energy-efficient stoves, in selling and installing solar systems or in managing village-based power systems (UNIDO, 2014).

Several wPOWER’s partners have focused their value proposition on women as drivers of change in the energy access space, demonstrating success in reaching last mile distribution.

Community presence

In introducing a new technology, gaining the trust of local communities—especially in remote villages where the social fabric is cohesive—has been found to be an important entry point (Dutta, 2015). Building on this social dynamic, it is vital to work closely with individuals, organization, and networks that enjoy local trust, such as community-based organizations, cooperatives, savings and loans groups, schools, churches, and local government representatives (Dutta et al., 2017). To this regard, a key aspect in ensuring good after-sale service is to establish a network of local technicians who can provide prompt maintenance and repair services (Gradl & Knobloch, 2011).

Empower Generation

In order to gain trust and confidence in the community, Empower Generation holds local sales promotion events to introduce the women entrepreneurs and to educate customers on the benefits of clean energy technologies.
Product availability

Product stocking is crucial for both the cookstove and solar product distribution channels, and women can play a key role in reaching the last-mile customers and in maintaining an efficient distribution network.

A key success factor for companies operating in low-income and emerging markets is related to ensuring a strong local representation (Asian Development Bank; Gradl & Knobloch, 2011).

In fact, involving agents that are part of the target communities and building a network of dealers and service personnel at a local context is an important feature for success. Existing networks related to other products, such as farm machinery, generators or telecommunication devices, can be also used in the delivery of the energy solutions (Gunaratne, 2002).

However, providing maintenance and repair in rural and sparsely populated areas can be particularly expensive and difficult to deliver (Bardouille, 2012). Using existing infrastructure to keep spare parts (Gunaratne, 2002) and training local technicians in order to optimize services can be a recipe for success.

Quality certified products

In the past, poor quality products triggered market distortion and mistrust in clean energy technologies, therefore it is crucial that renewable energy products meet international standards and that they are sold with warranties, or provided on a full-inclusive service basis.

Pollinate Energy

Focusing on high quality products contributes to high customer satisfaction, increased sales and low returns of products.

One of the barriers of introducing DRE technologies in BoP contexts is related to the unfamiliarity or lack of awareness of renewable energy products, often caused by market distortion due to poor quality products (IFC, 2011). Building confidence and trust in renewable energy systems is essential in communicating benefits of using these technologies. Marketing campaigns operating at different levels (word of mouth, radio, roadshows, partnering with existing brands) can help in reaching BoP customers (Bardouille, 2012). Warranties help increase customer confidence in the product, and women technicians can provide repair and after-sales services. The establishment of energy hubs for maintenance and repair can also support the training of women entrepreneurs in trouble shooting technical problems. Thus, ensuring products long life-time is essential not only to avoid system failures and improper repairs by end-users, but also to reduce costs incurred by the provider.

Providing services that ensure that products are collected to be re-used or re-manufactured at the end of their life span is a key factor to ensure environmental sustainability (Mont, 2002). End-of-life services can be provided through strategic partnerships with local actors who can collect broken equipment or expired batteries (Gradl & Knobloch, 2011).

Women in these contexts have an important role to play. For example, they are well-positioned to ensure proper

Barefoot Power

In Kenya the company partners with the Kenya Woman Microfinance Bank (KWFT) to provide women with a comprehensive package that includes financing, solar products and appliances and after sales services. KWFT ensures a deep penetration into rural off-grid communities, which represent 80% of their clientele.
maintenance and care of clean cookstoves and they can encourage their long-term adoption. If networks of women entrepreneurs are able to sell products to all types of consumers, including those in the last mile, they can also serve as the after sales service providers, specializing in troubleshooting technical problems, parts replacement and repair, customer service, and warranties.

Access to finance

While appropriate products are central to clean energy models, so is ensuring that customers are able to afford these products, and at the same time ensure that entrepreneurs have access to funds to meet both investment and recurring costs (Dutta et al., 2017). BoP customers, despite being willing to pay a high price for clean and reliable energy, in some cases still cannot have access to most solutions and technologies. A common practice is to adopt payment structures that mirror existing spending patterns of the target customer (Bardouille, 2012). Offers that allow flexible payments according to seasonality of income and cash availability are an example of how solutions can be designed according to the type of customer (Hankins & Banks, 2004). The last few years have seen a high increase in the number of organizations leveraging mobile payments technologies. These solutions enable providers to tackle one of the main barriers to clean energy implementation, affordability.

Through mobile payments customers can pay small incremental amounts based on their income availability, mimicking existing spending patterns for non-renewable sources (kerosene, charcoal).

Coaching and mentorship

Women typically start with small energy businesses, but with consistent support and mentoring, many go on to become social leaders in their communities. The process starts with a very careful selection process, clearly identifying the barriers each of them faces and systematically addressing them. A common thread in all interventions is continuous mentoring to support business development to the entrepreneurs.

Gender-sensitive trainings should be offered according to the type of involvement women have in the value chain, for example training on leadership and personal development can help women entrepreneurs who are involved in customer relations functions such as, distribution and after sales services (Hart and Smith, n.d.).

LivelyHoods

Continuous support is a key for success: after one week of technical and sales-based training, women receive two weeks of soft skills and personal development coaching. Involving well-established sales agents helps in providing guidance to new recruits.

Pawame

As affordability increases and customers become aspirational, tech driven measures to assess their creditworthiness will be increasingly important; or the alternative will be to specialize in the training of sales agents to become loan officers, as they are the first line in building a healthy loan portfolio for the customers.
**Women’s networks**

Tapping into women's networks is vital in increasing awareness and adoption of clean energy alternatives and promoting financial independence through micro enterprise.

Partnering with local groups and associations and working with community members can help to establish trust in the community. It is particularly valuable to partner with women’s groups. Groups of women can either be created or programs can work through existing groups. Group settings can enhance the ability of women to overcome constraints, both cultural and social. Women working in groups can also have greater access to markets and intermediaries who can source local materials, distribute and transport goods, access new retail outlets, etc.

In addition, women can draw on their natural circles of family, friends and community for customers. Compared to men, women have smaller social networks but with stronger ties, and this has been proven to be an effective recipe for distributing renewable energy technology to rural households (UNIDO, 2014).

**Technology innovation**

Several authors highlight the importance of choosing a technology that reflects resource availability and that is site specific (Zerriffi, 2011; Terrado et al., 2008; Lemaire, n.d.). The technology should be also flexible and robust for a number of users, in terms of energy capacity and should consider energy demand changes and seasonality of resources (Barnet, 1990; Biswas et al., 2001). Another important point is that technology and related services must be customized to specific needs of communities (Chaurey et al., 2012).

The renewable energy revolution in off grid markets has seen tremendous changes over the past years in terms of technology efficiency and quality, options for appliances (e.g. LED lights, radio, TV, phone charging) and payment methods. The pay-as-you-go model is enabling women in off grid locations to make small payments towards acquiring both solar and electrically powered devices that would ordinarily be out of their reach. However, increasing use of mobile connectivity and mobile money to access energy reveals gender differences in many countries (Clancy et al., n.d.). Across low- and middle-income countries, 390 million women are not connected to a mobile network (GSMA, 2018) and gender barriers in accessing mobile phone technology confirm that the use of mobile phones in Africa is not gender neutral (Energy 4 Impact, 2017).

For these reasons, technology innovation should consider gender differences and gaps across different contexts, and designed solutions should consider women access to the specific technology proposed.

**Project Gaia**

Women play a key role as community leaders in the refugee camps and they can promote stove safety training and proper fuel handling. Women’s associations such as the Former Women Fuelwood Carriers’ Association play an important role in last mile distribution of ethanol fuel to client households.

**Envirofit**

Investment in research and pilot testing with consumers is necessary to ensure that the design matches habits and preferences. Stove models need to be adapted to different cooking traditions and cultures, meeting quality and performance standards.
The clean energy value chain

Women are often characterized as beneficiaries of activities and projects but rarely seen as agent of change. As discussed in a report by IUCN (2017), women are usually portrayed as vulnerable to the effects of climate change, gender-based violence and discrimination, and as recipients of benefits such as capacity building opportunities. Less often they are identified as key stakeholders, decision-makers and agents of change. In particular, women’s knowledge and capabilities, or their agency, often goes unrecognized because of social, political and economic structures hindering both their access to reliable, clean and affordable energy resources and their participation within the energy sector.

The scope of this analysis is to provide a better understanding of how the Evidence Proof Points (see next section) support the business case of involving women in the energy value chain, not particularly as target users, but as active agents of change through empowering entrepreneurship opportunities. In order to provide a basis for implementing these essential measures, it can be useful to engage women across the clean energy value chain.

The enabling environment refers to the ecosystem conditions that affect energy businesses and women’s participation. These include enabling policies (e.g. gender-responsive energy policies) and the availability of investment.

The supply side refers to the business value chain where women can get involved at different stages, from design and manufacturing of products, to distribution and after-sales services.

The demand side includes factors affecting the adoption of clean energy and the involvement of women as entrepreneurs. Interventions at the demand side can include, for example, identifying needs and business opportunities that women seek and ensuring that these are accessible to them.

The following section highlights essential measures to be taken to advance women’s involvement in the clean energy value chain, and ultimately accelerate adoption of renewable energy products. Interventions can focus on one or more sections of the value chain, such as providing financing or mentorship for entrepreneurs. However a systematic approach that considers multiple entry points for women could represent a recipe for success.
What is the evidence for the acceleration of household clean energy access?

Lessons learned from wPOWER’s partners

The Gender Global Entrepreneurship and Development Index (GEDI) measures the favorable conditions for female entrepreneurship development. Some of the variables used to rank countries are: female science graduates, networking potential, female business investors and equal legal rights (IUCN, 2014). Women worldwide have a larger percentage of entrepreneurship activities in the informal sector, and these are likely to be based on necessity rather than opportunity. However, there is evidence that this changes in situations where economic development exposes women to new opportunities (IUCN, 2014).

So what are the barriers for women entrepreneurs in the renewable energy space? The lack of information about new forms of energy, lack of technical skills and capacity, and difficulty in accessing credit and financial services are some of the barriers often cited in existing literature. In many countries, gender stereotypes about women’s role in the labor market place women in a traditionally marginalized position and exacerbate the lack of opportunities for women to improve their conditions.

In addition to the general barriers women face, women entrepreneurs face an extra set of challenges that can be influenced by the size and nature of their business, the socio-demographic background of women entrepreneurs, and their geographical location (Hart and Smith, n.d.)

The following sections provide a brief review on the essential measures that should be taken to tackle the barriers that women entrepreneurs face in getting involved in the energy value chain, and ultimately in accelerating household clean energy access.
Awareness of entrepreneurship opportunities

It has long been recognised that the availability of electricity alone is not sufficient to stimulate enterprise development (Kooijman-van Dijk, 2009). Evidence collected from research and case studies supports the hypothesis that women are capable of seizing opportunities when they have the right resources, however it is important not only to ensure that they have the right set of skills, but also to ensure that women’s capacity to participate is not undermined (Clancy et al., 2011).

A first crucial step is to move beyond depicting women as beneficiaries and vulnerable populations, and to build awareness that women are essential actors in the clean energy value chain (IUCN, 2014). This step can be achieved by disseminating of success stories of women and girls in the energy sector, side events at major energy meetings, communication campaigns, identifying high level champions, and replicating successful models for women’s advancement (IUCN, 2014).

Accessible opportunities

Increased access to affordable, reliable and sustainable forms of energy can reduce the burden of household chores, allowing women to engage in other productive activities. However, entrepreneurship opportunities are often not accessible to women due to discriminatory social norms and practices which limit women’s opportunities with regards to education, mobility, access to and control over land, and decision-making. In particular, women often face discrimination in the access and ownership of land due to varying levels of legal protection, and lack of cultural acceptance of their land rights (IUCN, 2014).

In addition, limited education reduces women’s opportunities to enter technical sector employment including renewable energy, or to operate their own energy enterprises. Even when women are employed in energy enterprises, social norms may confine them to more intermittent, less well-paid positions. It is also important to consider women’s access to products and services that enable entrepreneurship opportunities, such as mobile-based financing, which can be affected by cultural norms and existing gender barriers.

ICRW’s research with Solar Sister and other clean energy enterprises has shown that engaging women in clean energy initiatives not only improves the lives of individual women, but also influences the way that these women are viewed by their husbands, children...
and community members as they become leaders in their community. At the same time the company benefits from their vast sales networks and relationships with clients.

**Value for Women**

Gender inclusion is not a “one size fits all” solution: gender solutions are most effective if they are customized for a businesses specific needs.

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**Affordable capital and flexible pay options**

A major barrier for women entrepreneurs to engage in clean energy opportunities is related to access to finance. This aspect resonates with several other factors associated with different ways in which poverty affects men and women (Clancy et al., 2011). In fact, women are subjected to different processes that trap them into poverty, such as divorce, widowhood and desertion. Under the same circumstances, women tend to be more disadvantaged than men, for example in accessing credit. Another aspect influencing access to finance is related to the gender relations at household level and particularly in terms of intra-household decision-making (Clancy et al., 2011).

Support for women-led enterprises should address long-term finance and involve both innovative payment plans and complementary business development support.

Access to financing is crucial to enable women to transition from micro-scale informal sector activities to larger and recognized business. Access to finance can be provided through different financing mechanisms: partnering with financial institutions to provide loans and enabling women to invest in income-generating opportunities; providing credit through the product supplier; organizing women’s groups to get access to saving networks. In any case, it is essential to train women entrepreneurs on financial management and to conduct education and advocacy activities to increase women’s ability and willingness to borrow money (Hart and Smith, n.d.).

For entrepreneur finance, micro-credit has helped to get initial access to financing services, however access to finance to scale up enterprises is still a barrier. Investments in women-owned enterprises need to be made to fully capitalize women’s potential (UN Women, UNDP and UNEP, 2015). Social and legal restrictions for women have an impact on their ability to access financing and to be actively involved in the energy value chain, therefore it is critical to address legal and regulatory framework that prevent women to have access to credit and other financial services (UNIDO, 2014). For example, in Nepal, the Renewable Energy Subsidy Policy of 2013 has specific subsidies targeted to women and socially excluded groups, both at the household and community level, for solar thermal, biogas, and metallic cookstoves (ENERGIA/ ADB, 2015). Other examples include targeted credit and targeted credit guarantees; leveraging savings and credit groups.

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**Oorja**

Women must be integral part of the solution. They should be involved in the decision-making process when designing energy solutions, as well as in implementation and delivery.
Acceptable and aspirational opportunities

A large body of research supports the claims that female role models are instrumental in changing aspirations among young girls (ENERGIA, 2016). For example, research shows that the same number of girls and boys express interest in STEM careers and achieve an equal level of success through secondary education, but the lack of visible role models and mentorship for girls and women leaves them feeling isolated in undergraduate or graduate programs and in entry level jobs (IUCN, 2014).

**ENVenture**

A clean energy loan is not enough and synergies need to be harnessed from energy stakeholders in order to achieve long-term sustainability.

Opportunities in the clean energy sector should be aspirational to women, both in terms of products that reflect women's needs and preferences and in terms of empowerment for a more secure and dignified livelihood.

Gender roles are socially determined and are influenced by a range of social, political and economic institutions (Clancy et al., 2011). Women tend to have a larger amount of tasks and responsibilities than men, mostly associated to the private sphere. For these reasons, it is important to design entrepreneurship opportunities that consider cultural and social norms, but that also adapt to the demanding lives that women, especially in rural areas, may have.

Products and opportunities that reflect women's needs and preferences, as well as cultural appropriateness, have a direct impact on renewable energy adoption. In documenting best practices, UNDP (2001) reported that the involvement of women in the design of the technology was crucial for long term sustainability of clean energy adoption. In one case in Ghana, women from rural fishing communities were engaged to design clean fish smokers which would reduce the smoke inhalation and would support women’s productivity. Engaging with women during their income-generating activities, such as fishing and food processing was crucial for the project implementers to make sure that the technology was both appropriate and accepted by the community (UNDP, 2001). In the cookstove sector, best practices for scaling adoption of clean cookstoves are widely reported by GACC (2016).

Agency to address cultural barriers

Women entrepreneurs need resources to support their growth and seize opportunities, but they also need agency to make their own decisions and to gain control over their resources and profits (GACC, 2016). A significant barrier to women's participation in the energy value chain is represented by the negative cultural attitudes towards women running businesses (ENERGIA, 2016). Prior to the implementation of energy projects, a gender analysis should focus on understanding the differences in gender roles, activities, needs, expectations and opportunities in specific community.

A first measure to address cultural barriers is to provide agency-based training. Research suggests that when women receive appropriate training, there is a substantial increase in their capacity and willingness to identify and pursue economic opportunities (Shankar et al., 2014). However, even when women have significant training and hold positions of power, a culture of preserving the status quo and an "old boy’s network" prevents them from making decisions (IUCN, 2014). Programs must be designed to empower personal skills and self-awareness, as well as address the constraints to entrepreneurship, and macroeconomic policy change. (Chitsike, 2000).
In addition, cultural barriers lead to economic barriers in many cases. Women are almost exclusively engaged in unpaid work (childcare, family engagements, community care, elderly care) which don’t leave time for women to engage in business. A report on Solar Sisters activities (CITE, 2018), highlights that rural customers value social considerations beyond financial ones, but that a gender bias that views men as more suitable business people still exist in many rural contexts. A report on ENERGIA’s research activities (ENERGIA, 2016) supports the evidence that not only intra-households decision-making is crucial for switching to clean energy, but that when women have access to income generating opportunities, the household dynamics change and women become more confident to take control of their own lives.

Several examples in the literature are supporting these claims: women living in Mathare slums in Kenya received training and created two saving groups, after 6 months 90% of them reported having a better capacity to cover expenses and to save money (GACC, 2016). Women who received the agency-based training were twice as likely to pursue sales leads and were better positioned to face challenges in their business activities (Shankar, Onyura and Alderman, n.d.). Women who participated in the agency-based training program sold nearly three times as many cookstoves as their male counterparts (Shanka et al., 2015).

A number of steps can be taken to improve women’s agency as end users, including helping female energy entrepreneurs participate in local energy committees; improving the way in which energy options are communicated to women and communities; adapting marketing strategies to target women specifically; and building gender sensitivity with energy industry associations (IUCN, 2014).

**Advocacy**

One way that renewable energy projects could incentivize women’s entrepreneurship is to consider gender certification of vendors, suppliers, and other partners in the procurement process for these services. In Mexico, the National Institute for Women has found success with a program to certify gender equitable enterprises in both the private and public sectors (IUCN, 2014). Other specific actions include analyzing national policy frameworks, identifying gaps and opportunities to develop a gender-responsive energy policy and budget, use gender-disaggregated data collection, and development of training content and methodologies for involving women in clean energy.

For example, when the Nicaragua Gender Equality Act (Law 648) was established, the objective was to achieve gender equality in the labor force of all sectors of the economy. As a result, energy companies such as the National Electric Transmission Company (ENATREL) started to recruit more women and reported that 50% of high level managerial positions were held by women (IUCN, 2018).

**Energy 4 Impact**

Advocacy work to support gender-sensitive energy policies and investments has been crucial in ensuring that governments and donors allocate investments to programs that are gender informed.
**Association across women's networks**

Women are best placed to become agents of change because they have extensive social networks and deep understanding of the dynamics and problems in their communities. A report on Solar Sister’s entrepreneurs (ICRW, 2015) found out that women entrepreneurs support each other, exchanging best practices, working together and ultimately having a long term positive impact on the business sustainability.

Tapping into women as community leaders with strong social networks can also help to scale up initiatives. GACC (2016) reports that women’s network can be used as opportunities for women to share their experiences and how they overcome challenges, thus inspiring other women and eventually helping to recruit new entrepreneurs.

Association of women at different levels is important, not only as a distribution strategy, but also as an effective growth strategy. A report on the business case for women’s empowerment by McKinsey (2010) highlights that higher degrees of gender diversity in companies and the attraction and retention of female employees are not only related, but they also have a direct influence on returns. In addition, the more women leaders emerge the more they leverage their own success stories to improve circumstances of other women.

**SOLARKIOSK**

A core leadership of women at the management level of SOLARKIOSK assists in communicating with kiosk operators and resolving challenges and barriers, such as motherhood and other unique challenges facing women in the value chain.
wPOWER’s partners
African Development Bank Group
The overarching objective of the African Development Bank (AfDB) Group is to spur sustainable economic development and social progress in its regional member countries, thus contributing to poverty reduction.

Challenge / Problem tackled
Over two thirds of Africans lack access to modern energy - in Sub-Saharan Africa just 290 million have electricity access, and nearly 730 million Africans rely on the traditional use of solid biomass for cooking.

Key activities / solutions
The AfDB mobilises and allocates resources for investment in RMCs, and provides policy advice and technical assistance to support development efforts. The Bank is currently promoting awareness of multiple energy-gender linkages between key policy and business decision-makers. The Inclusive Infrastructure Initiative works on ensuring that women are represented at all levels of the African energy value chain.

“We must imagine a revolution for this sector to achieve extreme affordability”
Wanjira Mathai
Women are incredible agents of change. The problem is they have been either barred from participating in development as they didn't have knowledge, as they are blocked from access to literacy, education, money. Once they get rid of these barriers, it all opens up.

Meagan Fallone, CEO of Barefoot College International
Barefoot College

Ushering in self-sufficiency, employment and income in communities worldwide

Barefoot College has developed a worldwide empowerment model to address 17 Sustainable Development Goals. The Enriche program provides women entrepreneurs with resources to earn a stable income and create products and services that deliver social and environmental benefits.

Organisation

Barefoot College trains women to be solar engineers, educators, and innovators, so that they can bring clean water and energy to their communities. Headquartered in India and operating across 90 countries, Barefoot College has impacted over 2 million people.

Challenge / Problem

Barefoot College’s mission involves tackling several development issues such as ending poverty, empowering women, creating environmental sustainability and expanding renewable energy. Most of the women involved in Barefoot College’s programs are illiterate or semi-illiterate home-makers who are daily wage earners. They tend to have longer working hours than their male counterparts while simultaneously taking care of children and family. In many situations they are not able to freely speak their minds and they tend to be confined in subordinated roles by the patriarchal society they live in.

Solution

Barefoot College’s trainees “Mamas” are often illiterate or semi-literate grandmothers who maintain strong roots in their rural villages and play a major role in community development, bringing sustainable electricity to remote villages. These Solar Mamas are trained as engineers and they learn a comprehensive set of skills that enables them to create sustainable economic opportunities.

The Enriche program supports women in reaching their full potential by combining a solar training program with coaching on self-awareness, reproductive health, digital literacy, financial inclusion, legal and civic rights. Their approach includes access to financial services and Mentoring & Market Linkages, which aims at supporting women to become self-reliant and resilient entrepreneurs. The Barefoot College approach is particularly unique because it tackles barriers for creating self-reliant communities by providing enterprise opportunities and by forming alliances to ensure a decentralized and sustainable scaling-up.

Outcomes

Barefoot College has trained solar engineers in over 90 countries and their Training Centers serve as Incubation Hubs, where women’s enterprises benefit from a dedicated supporting team multi-sector expertise, from technical training to end-consumer marketing. The Enriche program has shown that women’s access to practical knowledge and skills is fundamental for their success as entrepreneurs. Women empowerment workshops carried out as part of the program have proven to be an essential component for developing confidence, awareness and empowerment for women entrepreneurs.

Key lessons learned

- The Enriche program created safe spaces for women where they can not only learn about key issues such as reproductive health and financial literacy, but they also have a platform to passionately share their experiences and support each other.

- Women’s collaboration and sharing personal stories with one another helped in building a safe environment and increasing trust.
Barefoot Solar light has really helped me and I encourage people who are still using kerosene lamps to embrace these products because in my home we use Barefoot solar which gives us clean light and there is barely any difference between us and someone using Umeme (grid electricity) at home.

Esther Ocaya, customer
Barefoot Power
Designing and distributing quality solar products across communities worldwide

Barefoot Power works to reduce communities dependence on harmful and expensive fuels by promoting affordable and reliable solar products and appliances. The enterprise offers comprehensive solar technology packages with a range of services to match lower-income customers’ needs and aspirations.

 Organisation
Barefoot Power is an Australian enterprise with a global footprint that designs, manufactures and distributes solar lighting systems and appliances. Their products reach off-grid communities in Africa, India, Asia, and America.

 Challenge / Problem
Millions of households living at the BoP lack access to clean and reliable energy. Awareness of solar technologies is not very widespread, and providing energy access in off-grid contexts requires a combination of certified products with a comprehensive after-sale service to ensure long-term sustainability. In addition, BoP customers require disposable income to be able to afford up-front costs for solar and clean energy products, and they often lack access to financing services.

 Solution
Barefoot Power focuses on an extensive range of quality solar products offerings in the off-grid market, installation package, after sale services and maintenance program, together with diverse and supported distribution strategies. Barefoot Power partners with local stakeholders to establish effective distribution channels.

In Kenya, for example, the company partners with the Kenya Woman Microfinance Bank (KWFT) to provide women with a comprehensive package that includes financing, solar lights and appliances and after sales services. KWFT ensures a deep penetration into rural off-grid communities, which represent 80% of their clientele.

Barefoot Power ensures a strong community presence by training local technicians to main-tain the solar products and to provide end-users with advices about energy usage.

Focusing on women has become one of the strategies to improving livelihoods and distrib-ute products in communities. Where possible, Barefoot Power has a focus on training women technicians and entrepreneurs, teaching young women to become solar installers. Access to finance is provided through partnerships with MFIs, SACCOs and local banks.

Outcomes
Barefoot Power has impacted thousands of communities by providing clean energy solutions, reducing the incidence of chronic illness due to indoor air pollution, cutting greenhouse gas emissions, and improving livelihoods.

Over the next 5 years, the “Women Increasing Sustainable Energy Access and Use (WISE)” initiative will be implemented by Barefoot Power in Sierra Leone, Uganda and Kenya. The action is designed to help women establish sustainable businesses by providing them with capital, technical and business training, with the overall goal of increasing the number of women participating in energy value chains.

 Key lessons learned
• Capital financing is crucial to ensure affordability for lower income customers;
• The off-grid solar market requires assistance for companies to be profitable and at the same time meet the needs of BoP customers with a low purchasing power.
Women are key contributors at every level of our organization, from the factory floor to the management ranks. We see this as a win-win situation. BURN’s female employees have personally fulfilling jobs that directly support their families and communities. Meanwhile, we tap into a remarkably talented workforce that helps us achieve our vision of a world where cooking saves lives and forests.

Boston Nyer, BURN’s COO
BURN Manufacturing

Empowering women with economic opportunities at all levels of the efficient cookstoves’ production

The company designs and manufactures efficient cooking stoves which directly impact women’s lives. BURN was awarded the 2015 Ashden Clean Energy for Women and Girls Award for their work in providing efficient and affordable clean energy solutions while including women in the energy value chain.

Organisation

BURN’s core business is the design, manufacturing and distribution of efficient cookstoves in Sub-Saharan Africa, with the goal of saving lives, money and forests. Their 225-person team is based in Kenya and the US. The Jikokoa is manufactured at the BURN factory in Ruiru, just outside Nairobi.

Challenge / Problem

The majority of Kenya’s households use charcoal and biomass as the primary energy source, which is either burnt on open fires or in inefficient cooking stoves. The demand for these fuels drives deforestation and contributes to air pollution and climate change. Women spend large amounts of their income and their time to procure fuel for cooking.

Solution

BURN designs and manufactures Jikokoa (and other efficient stoves) was initiated by the BURN Design Lab, and is continually refined through market research with individuals and focus groups in Kenya. The design process achieves not just technical performance, but also user acceptance, which is crucial to ensure that the stoves are bought and used. Jikokoa are sold through more than 150 partners including banks and microfinance organizations, social distributors, and retail outlets ranging from supermarkets to small stores.

One of the strengths of BURN’s offering is ensuring affordability of their products to lower income customers. The company partners with microfinance providers such as Equity Bank, Kenya Women Microfinance Bank and M-Kopa allowing users to purchase a Jikokoa for only US$ 40 cents a day, over four months. BURN’s stoves offer 50% fuel savings and provide cleaner household air by reducing smoke emissions by more than 60%, and are a much more efficient cooking method than traditional fires or ceramic cookstoves.

Outcomes

Women represent 53% of the workforce at BURN and are in all types of jobs and at all levels. Women are 46% of those employed in production, and 65% of those in administration, sales and management. This gender equality has been achieved through fair and consistent employment practice, rather than quotas or positive discrimination. BURN makes very clear that appointment is based on merit and that all positions are open to women.

Since 2013, the company has sold more than 435,000 stoves, helped customers save US$ 98 million in fuel expenses, saved 1.7 million tons of wood through its stoves, eliminated 3 million tons of harmful carbon dioxide emissions, and benefited over 2 million people worldwide with its looking solutions.

Key lessons learned

- Coaching and mentorship is vital in encouraging initiative and confidence in women employees;
- Gender disparity in technical and skilled jobs needs to be addressed through education;
- Providing a conducive working environment promotes women’s participation in the manufacturing industry.
Before Empower Generation, I was working in a food packaging factory, working long hours and earning very little. I felt like I was swimming in a tiny well. Now I am swimming in the ocean. I have ambitions and there are possibilities for me.

Basanti Chaudhary, Entrepreneur
Empower Generation

Connecting Nepal’s poor with clean energy technologies

Empower Generation delivers clean energy solutions by developing a market-based approach and by training women to become energy entrepreneurs in remote areas of Nepal. The organization has recently joined forces with Pollinate Energy to tackle energy access and women’s empowerment.

Organisation

With a geographic focus on Nepal and South East Asia, Empower Generation is a social enterprise that trains women as solar engineers and entrepreneurs to establish sales and distribution businesses that serve the most marginalized communities with clean energy products.

Challenge / Problem

Nepal is still one of the poorest countries in the world, with over half of the population living without access to modern energy services. Energy poverty affects women and children the most, with many dying each year from respiratory problems associated with combustion of dirty fuels (kerosene and firewood). Rural Nepalese women still face many challenges in gaining equal access to economic opportunities due to lower education levels, a patriarchal society, and systematic poverty.

Solution

Empower Generation develops sustainable livelihoods for rural women, otherwise vulnerable to human trafficking and other forms of exploitation. Their comprehensive approach includes training and mentorship to women, access to capital finance through low-interest loans, and access to a supply chain of clean energy products. Once a loan is paid back, Empower Generation helps the entrepreneur to get access to micro-finance. Empower Generation also provides marketing materials, and sales demonstrations in the communities are key channels to raise awareness. In 2018, Empower Generation launched Pay-As-You-Go (PAYG) Solar Home Systems and piloted this model in Siraha, eastern Nepal.

In addition, the social enterprise has started to distribute efficient cookstoves to better respond to women’s needs for clean energy in the home. Women entrepreneurs are also leveraging other young women in the community and many of them have recruited sales agents from marginalized castes. Empower Generation has recently merged with Pollinate Energy, an Australia-based social enterprise that brings life-changing energy products to families living in India’s urban slum communities.

Outcomes

Since 2011, Empower Generation has helped 23 women start 20 businesses, deploying 300 sales agents across 12 districts in Nepal. The women-led distribution network has provided customers with 58,580 clean energy products, reaching almost 300,000 people with cleaner, safer, light and power. These families have saved over USD 2 million in household energy expenses and displaced 12,843 tons of CO2. Women entrepreneurs learned how to manage a business, earn an income and employ people. They also developed confidence to take on other leadership roles in their communities.

Key lessons learned

- Women entrepreneurs gained confidence and agency and became active in their communities, with some of them running for political office in the local elections.
- In order to gain trust and confidence in the community, Empower Generation holds local sales promotion events to introduce the women entrepreneurs to the community and to educate customers on the benefits of clean energy technologies.
I joined the group to bring change, focusing first on malnutrition in the community and then on health and education. Now I want to do something about the energy shortages that we face and change the quality of life for people throughout the region.

Uomi Ngom, entrepreneur supported with the WE programme
**ENERGIA**

Addressing gender and energy issues by focusing on women’s empowerment, research and advocacy for policy change

ENERGIA’s Women’s Economic Empowerment program (WE) works with entrepreneurs, providing training and technical advice to become successful micro- and small business owners, energy service providers and even leaders in their communities.

**Organisation**

ENERGIA International Network on Gender and Sustainable Energy, funded in 1996, is an organization hosted in The Netherlands by Hivos and active in 22 Asian and African countries. ENERGIA focuses on women’s empowerment, research and advocacy for policy change to achieve equal and equitable access to and control over energy services for women and men.

**Challenge / Problem**

Many off-grid communities lack access to reliable and clean energy options, and women can play a crucial role in scaling up energy access.

Several issues need to be addressed to scale up energy access for the last mile and women’s empowerment in clean energy markets including: limited access to finance, lack of awareness and information about entrepreneurship opportunities, limited links to markets, time poverty and limited mobility which affect ability to scale operations and business growth.

**Solution**

Women’s Economic Empowerment Program works with partners in seven countries to strengthen and empower micro and small scale women’s enterprises that deliver clean and renewable technologies. The program’s mission is to scale up business models that strengthen the capacity of women-led SMEs to provide energy services, by providing funding and technical support to partner organizations. ENERGIA works in collaboration with NGOs and social enterprises in Indonesia, Kenya, Nepal, Nigeria, Senegal, Tanzania and Uganda. The program supports women through training and technical assistance on finance and distribution, business development, marketing and partnership building in the private and public sector. The support package promoted by ENERGIA includes a set of tailored strategies: sustained mentoring support including agency building and empowerment trainings, customized solutions based on local needs, access to finance (loan guarantee funds, micro-credit), marketing campaigns, building partnerships.

**Outcomes**

The WE program has supported partners such as Energy 4 Impact, Practical Action and Solar Sister, who in turn empowered 4,153 entrepreneurs in mentioned seven countries. The woman-centric distribution model for clean energy products is an example of market-based innovation that integrates women both in the demand and supply side of the economy. Impacts of this program have been measured on a personal level (increased income, knowledge, self esteem and wellbeing), at the household level (financial security, decision making power) and community level (participation in community, employment).

**Key lessons learned**

- An integral approach that includes customization, finance facilitation, and continued mentorship are key for success;
- 70% of women entrepreneurs involved in the WE program recorded a positive profit margin per quarter;
- The WE program has a notable impact on increasing women’s voice in decisions within the household (82.2%) and in the business (93.6%).

**PARTNERS**
Given how the small family businesses are owned and operate, we will engage both women and men in the project by ensuring that women are able to make sound decisions for the business together with their partners. The energy products value chain involves both men and women and for successful delivery of the products to the markets it is extremely important that both are involved.

Godfrey Sanga, Project Manager
Energy 4 Impact
Adopting a market-based approach as a long-term solution to energy access problems in Africa

Energy 4 Impact tackles access to modern energy services and supports entrepreneurs in scaling-up and in becoming sustainable. The organization adopts a gender-informed approach to help women entrepreneurs in overcoming barriers and becoming active players in expanding access to energy.

Organisation
Energy 4 Impact is a non-profit organization with headquarters in the UK and local offices in West and East Africa. Their mission is to support the growth of energy access markets by supporting businesses at different stages of development that provide energy access to off-grid communities in Africa.

Challenge / Problem
Women often bear the burden of energy poverty, from gathering fuelwood to cooking meals on inefficient, smoky stoves. Traditionally, the treatment of energy in development policy and planning is gender blind, failing to recognize that women and men have different needs, experiences and opportunities.

Women-led enterprises have a tendency to remain small due to the lack of business skills, access to credit and distribution channels. Women also face gender-related barriers, unequal access to education, market information and capital, lack of technology training and skill-transfer opportunities.

Solution
Energy 4 Impact’s approach includes different interventions across the energy value chain. In order to address those gender-related barriers, E4I has adopted a number of interventions. These include conducting empowered entrepreneur training which looks at improving their self-confidence, leadership skills, motivation and commitment in their businesses such that they can take active role in decision making for their businesses and in their families.

Other measures include customizing project interventions such as trainings, mentoring and market development to accommodate women’s time, education and exposure to different business ideas and other entrepreneurs. The Women Integration into Renewable Energy (WIRE) Value Chains programme aims at supporting women energy entrepreneurs in rural Kenya, Tanzania and Senegal and E4I also works with financial institutions to design and manage customized credit lines to support women-owned businesses.

Impact
In 2017, Energy 4 impact supported almost 600 women in Kenya, Tanzania and Senegal to boost their involvement in the renewable energy value chain. To date, E4I's approach has provided access to energy for 16.5 million people and supported the establishment and growth of 4,000 businesses. Through their programs, women play multiple roles: manufacturers of efficient cookstoves and fuels, distributors for clean energy products, and operators of solar kiosks or phone charging stations.

Key lessons learned
• Running a program that support women’s entrepreneur-ship at the same time as implementing an advocacy program targeting policy provides the opportunity for tackling the same issues from different angles;
• Improving awareness of customers is crucial to generate a change in consumer practices;
• Tackling access to capital is crucial particularly for women enterprises, and working alongside financial institutions is important to monitor loan performance and repayments.
Women with innate business instincts can thrive in setting up retail, distribution, and/or manufacturing units in clean energy beyond just income generation, which would support the nation’s GDP growth.

Aneri Pradhan, funder
**ENVenture**

Supporting the creation of sustainable energy enterprises in rural Uganda

ENVenture is an incubator that trains rural Community-Based Organizations (CBOs) in Uganda to learn business skills and receive capital financing to launch sustainable energy businesses.

**Organisation**

ENVenture is a woman-led non-profit organization based in Kampala, Uganda. ENVenture incubates and trains Community Based Organizations (CBOs) by providing seed financing and business capacity support, enabling them to become last mile distributors for clean energy.

**Challenge / Problem**

In Uganda, 90% of the population lacks access to modern forms of energy for lighting and cooking and households spend about 30% of their income for energy access. Rural women particularly suffer the burden of lacking energy access, spending time for firewood and water collection.

In addition, Ugandan women are twice as likely to be unemployed as men and there is a crucial need for support beyond enabling micro-entrepreneurship, targeting women to lead small and medium enterprises. Often Community Based Organizations lack skills and capital financing to start up and scale new ventures.

**Solution**

In Uganda, ENVenture’s aim is to increase access to low-cost, low-carbon technologies, such as solar energy, non-electric water filters, improved biomass cooking stoves and fuel briquettes.

ENVenture partners with CBOs that want to start new ventures but lack the know-how to set up and scale these operations. The solution is based on three pillars: finance, capacity building and technology innovation. ENVenture provides affordable clean energy loans to CBOs to purchase high quality energy products.

The organization also offers coaching and mentorship opportunities through their Business 101 Bootcamps, covering topics such as finance, marketing, human resources management, sales and accounting. Capacity building on technologies such as solar, cookstoves, water filtration and briquette making, is provided.

ENVenture has also developed an open source app, ENVision Mobile, to support entrepreneurs in tracking inventory and sales and in managing their businesses more efficiently.

**Outcomes**

ENVenture has created more than 60 energy enterprises that have created many jobs in their communities, 70% of them being held by women. The enterprises have provided access to clean energy to 45,000 people. In 2017, ENVenture held three Business 101 Bootcamps and trained 200 people. Their work has enabled young people to gain access to new opportunities through a Business Development Fellowship and their business trainings have demonstrated increase in clean energy adoption.

**Key lessons learned**

- A clean energy loan is not enough and synergies need to be harnessed from energy stakeholders in order to achieve long-term sustainability;
- Take advantage of existing rural domestic activities by re-aligning them into an income generating activity, such as growing vegetables at home;
- Mobile phones can be used to introduce digital bookkeeping. ENVision mobile enables business management in hard to reach areas.
Empowerment training was a great eye opener for me; that the power to change my circumstances was within my reach. That I can no longer go through life as a passive participant but I can influence the change I want to see.

Beatrice Ayoro, entrepreneur
Envirofit

Designing, manufacturing, and delivering clean cooking stoves on a global scale

Envirofit International designs, manufactures, and delivers a global product line of clean cooking technologies that cook faster while reducing fuel use, smoke, and toxic emissions. Envirofit’s Women’s Empowerment Program (WEP) has helped transform the lives of many hundreds of women.

Organisation

Envirofit is a social enterprise that innovates aspirational cooking products and services that increase energy access for families living in emerging markets. With regional headquarters in the US and regional offices in East Africa, West Africa, Asia, and Latin America, Envirofit locally designs, produces, and delivers consumer-centered technologies for scale.

Challenge / Problem

Nearly half the world’s population cooks with biomass. Open fire cooking represents the world’s largest environmental public health challenge contributing to climate change, deforestation, disability and mortality, while keeping families in the cycle of poverty to collect or purchase fuel for daily cooking. Globally, families who cook with traditional methods spend on average up to four hours each day gathering fuel, or spend up to 30% of their income purchasing fuel.

Solution

In 2003, with a goal of improving harmful traditional cooking methods, Envirofit set out to change the way energy products were designed for people living in emerging markets and works to create life-transforming products and services that people desire and are willing to buy. By investing in market research, they found a range of different cooking needs such as cost, fuel type, pot fit, and cooking versatility which required different solutions. As a result, they offer a range of cooking products and services for families in different countries worldwide. In an effort to increase cookstove adoption, Envirofit founded the Women’s Empowerment Program (WEP), on the belief that women, as primary users of cookstoves, should be involved in the design and sale of cookstoves. Using an agency-based training model Envirofit provided training and sales support to equip women with the motivational capacity and business acumen to sell cookstoves to their target customers.

Outcomes

Envirofit recently surpassed 1.6 million cookstoves sales, positively impacting over 8 million people worldwide, prevented 25 million tons of CO2 emissions, saving families $206 million in fuel costs, and created 2,600 jobs. Through the WEP, training was demonstrated to be successful in improving business processes, selling strategies, earning capacity and self confidence. After completing the empowerment training, women who participated in the program sold three times as many stoves as men. In addition, their customers showed higher rates of continued clean cookstove use.

Key lessons learned

- Investment in research and consumer testing is necessary to ensure that the design matches habits and preferences of the people cooking;
- Stove models need to be adapted to different cooking traditions and cultures, meeting quality and performance standards;
- Engaging and training female entrepreneurs can increase sales and stove adoption;
- Program success requires mentorship, shadowing experienced sales agents, and logistical support.
I wanted to become independent and earn for my family apart from my daily chores. My husband and relatives try to stop me but I insisted to become Saheli and now I help them and the society not only as a housewife but as a responsible citizen.

Binesh, Sahelis
Frontier Markets

Unlocking women’s potential to revolutionise last mile energy access

Frontier Markets (FM) is bridging the gap between household needs, aspirations and availability of solutions and their approach and initiatives have created 3000 solar entrepreneurs with a 200% increase of income, out of which 1000 are women entrepreneurs.

Organisation

FM is a for-profit business based in Jaipur, India, with a mission to ensure a more energy-equitable future for millions of BoP households, while leveraging women’s opportunities in the renewable energy value chain. FM provides both energy services to villagers, as well as solar solutions to industrial and institutional organizations.

Challenge / Problem

FM tackles barriers to provide clean energy solutions in rural India. Distribution of products is a first challenge, as villages are dispersed and difficult to reach. Previous experiences with solar technologies have distorted the market, where low quality products have been ruining the image of solar, influencing people’s perceptions. In addition, since solar products require maintenance and repair services, technicians and repair centers must be located in close proximity to their customers.

Solution

FM adopts a comprehensive approach to tackle barriers in bringing clean energy to BoP rural markets. The enterprise has developed a model based on creating demand by holding meetings with local farmers, women’s groups, local leaders, and small business owners to better understand villagers’ energy and product needs. Then, FM engage in a variety of different marketing strategies for different occasions and markets.

In order to deliver to remote locations, FM uses a hub-and-spoke model for distribution. The head office is the ‘hub’, and the various branch offices are ‘spokes’, each managing a network of village-level entrepreneurs. They are provided with marketing services, product training, and attractive margins. FM particularly focuses on identifying women leaders and woman-focused NGOs to identify, train and partner with women who will sell solar solutions to other women as ‘Solar Sahelis.’ A recent partnership with Barefoot College aims at empowering 10,000 women entrepreneurs in the clean energy sector.

Outcomes

With the program “Saral Jeevan Saheli” in thirty districts of Rajasthan, India, FM have trained more than a 1000 women in the solar energy value chain. These Sahelis are successfully earning their living from this program. The trained Sahelis who ought to take the program up to the next level are provided with mobile phones, sewing machines and other household items much in demand to become the company’s ambassadors.

Key lessons learned

• Women require recurring income beyond commission of sales to be able to successfully achieve their income goals;
• New recruits are mentored by well established Sahelis and receive continuous support over six months;
• Involving well-established NGOs working with women helps in accessing recruits, while women’s groups help reaching new markets;
• Providing access to working capital for marketing and inventory increases women’s performance;
• Providing access to digital tools like mobile phones and internet connectivity allows for better communication, better monitoring and better support.
Gaia Impact Fund
Based in France, Gaia Impact Fund is an investment fund that specialises in start-ups and SMEs in the renewable energy field. The Fund seeks to empower innovative entrepreneurs with a focus on projects that have a strong social and environmental focal point.

Challenge / Problem tackled
Financing is one of the major barriers for companies operating in the clean energy value chain. Providing access to finance is crucial for delivering energy in Base of the Pyramid contexts and for scaling up initiatives.

Key activities / solutions
The Fund’s approach consists in a long-term partnership with entrepreneurs, which are screened in terms of viability of the business model and impact. Ventures include renewable energy producers, installers, manufacturers, engineering, maintenance & monitoring, new green technologies, and access to energy.

“**In entrepreneurship, women don’t need handouts. Women should to be engaged because it makes sense for business. We want to make sure that we have strong evidence that demonstrates the catalytic role women can play**

Wanjira Mathai
In Honduras, a group of women cooks use improved commercial plancha stoves for their tortilla-making business. In Guatemala, the Alliance finances women to serve as co-designers in the development of an improved plancha cookstove through the Women's Empowerment Fund.
Global Alliance for Clean Cookstoves

Strengthening gender-informed business models and empowering women in the cookstove and fuels value chain

The Global Alliance for Clean Cookstoves (GACC) recognizes the central role women play in meeting the target of 100 million households adopting clean and efficient cookstoves and fuels by 2020. The Alliance works on building and sharing knowledge, scaling up approaches and increasing gender impacts.

Organisation

The GACC is an initiative headquartered in Washington, DC, that works to boost the worldwide adoption of clean cooking solutions. Hosted by the UN Foundation, they operate in 9 focus countries and engage with a network of 1,800 partners. Their 10-year strategy is to advance the adoption of clean cookstoves and fuels in 100 million households by 2020.

Challenge / Problem

About 3 billion people in the world rely on solid fuels to cook their food, with 4.3 million people dying annually due to the exposure to indoor house pollution, most of them being women and children. Women spend large amount of time or income in collecting or purchasing fuel for cooking, often facing vulnerability to violence.

Women suffers disproportionately from the impact of energy poverty and their involvement in the clean energy value chain can play a key role in increasing awareness, generating demand and uplifting women out of poverty through entrepreneurship opportunities. However, there are major challenges to scaling women’s empowerment and entrepreneurship, including financing, appropriate policies and capacity of organizations to address gender issues.

Solution

The Alliance works with partners worldwide to build the evidence base for including women in the energy value chain, from product design and engineering, to sales and distribution. In addition, the Alliance documents best practices, testing innovative ideas through pilot projects and sharing lessons learned through toolkits and guides. The Women’s Empowerment Fund (WEF) grant program enables the Alliance to support the most innovative and effective gender-informed business models. The WEF seeks to scale the number of women energy entrepreneurs in the clean cooking sector and it has supported organizations in Guatemala, Haiti, India, Kenya, Myanmar, Nigeria, Uganda, Vietnam, Bangladesh, and Ghana.

Outcomes

Under the WEF program, grantees have supported more than 800 women entrepreneurs who have sold more than 250,000 clean energy products. The Alliance has produced a resource guide for integrating women in the clean cooking value chain. The guide encompasses a list of best practices to increase understanding on why women are critical and how to ensure they are involved in the design, production, finance, distribution and after-sales services.

The Alliance has also supported agency and leadership training for women entrepreneurs, resulting in increased sales and higher customer satisfaction.

Key lessons learned

- Empowerment and leadership training enhances entrepreneurs’ resilience - including men, but especially women;
- Engaging and sensitizing men, especially at the family and community level about women’s role in the value chain is essential;
- Engaging local government in creating an enabling environment for women-owned and operated businesses can have significant benefits.
Global Development Incubator

The Global Development Incubator (GDI) is a non-profit organization based in the US that incubates start-ups and supports organizations and initiatives to create large-scale social change.

Challenge / Problem tackled

GDI aims at addressing global challenges in several fields such as agriculture, poverty and health by providing scaling-up strategies and pathways for growth to start-ups, non profits and other organizations working in these fields.

Key activities / solutions

GDI works with partners over 2-3 years to achieve critical step-changes needed to scale up the organizations. They design tailored pathways to transform ideas into lasting change. GDI collaborates with wPOWER to provide strategic and implementation support, with the overall scope of building an effective partnership to promote the central role of women in clean energy entrepreneurship.

Partnership is about leadership, and leadership is about doing what is right, not what is easy

Wanjira Mathai
You cannot protect the environment unless you empower people, you inform them, and you help them understand that these resources are their own, that they must protect them.

Professor Wangari Maathai, Founder of the Green Belt Movement
The Green Belt Movement

Empowering communities and protecting the environment, using tree planting as an entry point

The Green Belt Movement is one of the most prominent environmental organizations based in Kenya, and it has a mission to empower communities, particularly women, to achieve a better environmental management, community empowerment, and livelihood improvement.

Organisation

The Green Belt Movement (GBM) is a Nairobi-based NGO founded by Nobel Laureate Professor Wangari Maathai in 1977. GBM aims to promote community empowerment, environmental conservation, and improved livelihoods, as well as mitigate climate change.

Challenge / Problem

Over 1.3 billion people lack access to electricity, and at least 2.6 billion people do not have access to clean cooking systems and fuels. The majority of them depend on wood fuel for cooking and kerosene lanterns for lighting. Inefficient lighting and cooking, although not the primary source of climate pollution, contribute to climate change and the degradation of natural resources. In addition, poverty, unemployment, water scarcity, deforestation and food insecurity are issues related to inequality, disempowerment and disenfranchisement. Communities lacked agency to change their political, economical and environmental circumstances.

Solution

The GBM has been engaging women in environmental conservation, climate change mitigation and adaptation for 40 years. Its main areas of activity are: Tree Planting and Water Harvesting, Gender, Livelihood and Advocacy, Mainstream Advocacy and Climate Change and Corporate Partnerships. GBM is working with women who had gone through this empowerment process engendered community transformation. Women are trained at the grassroots level to plant trees and cultivate seedlings, which are then sold in the market, offering them an additional source of income and an opportunity to manage the production of wood fuel.

GBM has conducted capacity building workshops on clean energy solutions amongst tree nursery group members and women entrepreneurs in several villages in Kenya. Through the Community Empowerment and Education (CEE) programme, GBM educates women about the linkages between human activities and the environment, and encourage them to take over leadership and take actions for changing their own communities.

Outcomes

In partnership with wPOWER, GBM has trained over 300 women in seven counties in Kenya, on Sustainable Clean Energy Entrepreneurship – a training course that targets community leaders, especially women involved in sustainable clean energy. GBM also provided training in natural resource management to over 200 rural women and community-based organizations, which has cascaded into them training over 20,000 members of their communities.

Key lessons learned

• Linking clean energy concepts with tree planting proved to be very effective in promoting conservation;
• As women receive the right information, they play a crucial role in demystifying long held beliefs in their society and act as change agents in their society;
• Traditional knowledge should be acknowledged and incorporated in capacity building, especially around community engagement;
• Once empowered with information, women are very effective in mobilizing and managing financial resources to start small businesses. However capital financing remain as major challenge.
Hivos
Based in The Netherlands, with a regional office in Nairobi, Hivos is active in 43 countries and has over 440 partner organizations.

Challenge / Problem tackled
Hivos tackles several development issues, such as sustainable food, renewable energy, freedom of expression, inequalities and women's empowerment.

Key activities / solutions
Hivos leads research, advocacy and support to frontrunners for social change through support activities such as capacity building and funding. The Women's Empowerment program promotes economic rights and justice for women and enhances women's participation in politics and public administration. Hivos hosts ENERGIA, and runs several programmes and campaigns that focus on women's leadership, migrant workers, women's participation in political processes and in value chains.

In entrepreneurship, women don’t need handouts. Women should to be engaged because it makes sense for business. We want to make sure that we have strong evidence that demonstrates the catalytic role women can play

Wanjira Mathai
Betty W. is a widow and a caretaker of seven from Lira, Uganda. To supplement her income and support her family, Betty became a vendor for Lifeline’s efficient cookstoves. Within a year, she was earning enough to send all seven children to school, and could even purchase some household appliances.

International Lifeline Fund
International Lifeline Fund

Clean cooking solutions for rural and urban households in Uganda and beyond

International Lifeline Fund develops and promotes technology, financing, and distribution systems that deliver safe and affordable water and cooking solutions in historically under-served communities. To this end, Lifeline is dedicated to nurturing, replicating, and scaling locally-owned and operated initiatives.

Organisation
Founded in 2006, International Lifeline Fund is a non-profit organization that works to address the lack of access to clean, safe drinking water and clean cooking methods. The organization operates a global office in Washington, D.C. and is currently active in Uganda, Haiti, and Burundi.

Challenge / Problem
Across Sub-Saharan Africa a large majority of the population cooks on an open fire. Only in Uganda, 20,000 premature deaths each year are connected to indoor air pollution and biomass accounts for 91% of the total energy used in the country.

Women face the burden of spending an average of 5 hours per day on firewood collection, exposing them to a greater risk of threats including sexual assault, wild animals, and thieves. At the same time, deforestation represents a serious threat to climate change and long-term sustainability.

Solution
In Uganda, Lifeline launched a clean cooking program, the commercial stove enterprise, which has a cross-cutting humanitarian activity, and which incorporates different stove models according to different user needs. These three models, the EcoSmart Wood Stove, the Charcoal and Briquette stove and the Institutional Stove are targeting the growing rural and peri-urban markets in Uganda.

The program components are: the local production of stoves, their distribution and commercialization to households by local vendors. Lifeline is involved in all steps of the cookstove value chain, including the selection of local suppliers, stove production management and distribution to local vendors.

Lifeline is planning to launch its fuel-efficient stove program into an independent social enterprise in Northern Uganda to achieve financial sustainability and greater social impact through clean cooking technologies.

Outcomes
Since 2006, Lifeline has manufactured and distributed over 285,000 cookstoves, impacting the lives of over 1.5 million people in the countries where they operate.

According to an impact study on the Uganda’s commercialization program, users affirmed that they perceived a reduction of health problems linked to domestic air pollution and an increase in women’s free time. In addition, local economies in Uganda and Haiti have benefited from the direct creation of hundreds of jobs. Women have reported the stove uses half as much firewood, saving them time and money.

Key lessons learned
• According to the impact study, 88% of the users interviewed feel that they are in better health since they started using the improved cookstoves, and 46% declared that they have noticed a significant decrease of acute health problems;
• Users value additional benefits from using the stoves, such as the increase available time and improvements at the domestic level between women and men;
• Raising awareness about the included maintenance is one of the necessary improvements to the service.
John Hopkins University

Johns Hopkins University (JHU), Bloomberg School of Public Health is the world’s premier institution in education, advanced research and practice to create solutions to public health problems around the world.

Challenge / Problem tackled

Globally, women face significant health threats due to exposure to harmful emissions from traditional cookstoves and fuels and must deal with the drudgery and time consuming task of searching for wood fuel. Most of these women live in poverty and have limited economic opportunities, especially in the energy sector.

Key activities / solutions

JHU is engaged several research activities designed to reduce the negative impacts of traditional cookstoves and fuels and also empower women to successfully participate in clean energy sector. JHU, in collaboration with Visionaria Network, developed the Empowered Entrepreneur Training Handbook. JHU is currently testing novel energy and empowerment interventions in humanitarian settings.

“Prioritizing women’s leadership in clean energy entrepreneurship is investing in our future.”

Wanjira Mathai
We believe in the power of young people to change their own lives as well as the fabric of their communities. What’s missing now is opportunities for youth and women to help themselves - and that’s exactly what we want to provide.

Tania Laden, Executive Director and Co-founder, LivelyHoods

Photo: LivelyHoods
LivelyHoods

Engaging disadvantaged youth and women in informal settlements through clean energy entrepreneurship

LivelyHoods is a not-for-profit social enterprise headquartered in Nairobi, Kenya. LivelyHoods creates dignified employment for youth and women living in Kenya’s urban slums. LivelyHoods has created jobs and established a reliable network of clean energy entrepreneurs, managing a network of 120 sales agents in 11 major towns and cities in Kenya.

Challenge / Problem

As in many other African countries, in Kenya the lack of employment for youth and communities in Kenyan low-income and informal settlements affects young people living in these contexts, with women facing additional barriers in earning a living. Most unemployed young people lack skills and opportunities to escape the cycle of poverty, with women carrying additional burdens due to societal norms and gender inequalities.

Most families use kerosene and candles for lighting, and inefficient cooking stoves that burn biomass for cooking. These pose a threat to women and children’s health by emitting toxic dangerous fumes, and they have a large impact on deforestation and emissions.

Solution

LivelyHoods’ model is based on a sales agent distribution network that combines outreach, training, employment opportunities to ensure consumers’ access to clean energy products. LivelyHoods operates local branches in each community, which serve as product stock points and sales agent training centers for youth and women. Training activities are focused on sales communications, business skills and environmental awareness and they include soft skills development such as confidence building.

As part of the Women’s Empowerment Program, developed in 2018 in partnership with the Global Alliance for Clean Cookstoves, LivelyHoods implements targeted support for women agents and started a women-only recruitment program by hiring a team of Women’s Program Managers and Trainers to support female sales agents.

Outcomes

Since 2011, LivelyHoods has created 1,600 jobs and trained over 3,200 young people. Currently 65% of the workforce is female, and over 28,000 clean energy products have been distributed in Kenya. Under the Women Empowerment Program, LivelyHoods has trained 79 women, who benefited from a three-week training, mentoring and revolving consignment of clean energy products. This approach led to an increase in tenure, confidence and sales. In addition, LivelyHoods has promoted at least one woman sales agent in each branch.

Key lessons learned

• A large number of women recruited as sales agent require flexible working conditions;
• Continuous support is key for success: after 1 week of technical and sales-based training, women receive 2 weeks of soft skills and personal development coaching;
• Involving well-established sales agents helps providing guidance to new recruits;
• Existing women’s groups helps reaching new markets through peer support and financing.
Women should be involved in the decisionmaking process when designing these solutions, as well as in implementation and delivery. Only by restoring the gender balance will we come to see the transformative social and economic development we know clean energy access can provide.

Amit Saraogi, CEO and co-founder
**Oorja**

Packaging power for last-mile rural markets in India

Oorja’s mission is to substantially and cost-effectively scale last-mile distribution of clean and reliable energy to help BoP communities increase productivity and income, revitalize the rural economy and combat climate change.

**Organisation**

Oorja is a for-profit social enterprise founded in 2016 and based in Mumbai, India. Oorja designs, installs and maintains smart mini grids that power income-generating appliances along the agricultural value chain.

**Challenge / Problem**

The social problems that Oorja is addressing are energy poverty, economic stagnation, agrarian crisis in rural areas and climate change. Lack of energy access is a fundamental barrier to economic development, notably in preventing commercial activity from taking place. A major driver of rural poverty is crop failure, especially among small holder farmers, who represent 40% of India’s population. Given the unaffordability of diesel irrigation and limited water accessibility using these pumps during dry seasons, marginal farmers experience declining crop yields and food insecurity.

**Solution**

Oorja designs and installs solar-powered mini-grids and solar pumps for businesses, agriculture and community institutions in rural India. They offer standardized mini-grids packaged together with solar pumps and appliances within a shipping container for ease of installation. Mini-grids are owned and operated by local franchisees and women’s self-help groups.

Water for irrigation is sold using ‘pay-for-use’ business model to small holder farmers and each community pump allows 15-20 farmers to share water using a smart pre-paid card. Uninterrupted electricity is sold on a per-unit basis to low-income agribusiness owners. Oorja is building a gender inclusion program to integrate women along the entire clean energy value chain by providing skill development training to them to become plant operators, technicians for O&M, sales agents, micro-enterprise owners and employees. Capacity building creates livelihood opportunities for women and provides them with agency to become economically independent and make their own decisions.

**Outcomes**

In June 2017 Oorja installed a 10 kWP smart solar mini-grid in Sarvantara village, Uttar Pradesh which powers one community solar pump, some small shops and 50 low-income households. The mini grid provides residential lighting, fans and phone charging to 500 people through cross-subsidy, saving up to 10% on their fuel expenses compared with previous kerosene use. Irrigation services are provided to 20 smallholder farmers, saving money from purchasing diesel. Women benefit as energy users of clean supply, reducing health hazards from burning of kerosene, safety and ability to do house chores after dark.

**Key lessons learned**

- Collaborating with local NGOs is necessary to overcome the challenge of conducting interviews and focus groups with women in an extremely patriarchal set up;
- Women technicians and operators should be chosen considering their proximity to the power plant;
- Women must be integral part of the solution. They should be involved in the decision-making process when designing energy solutions, as well as in implementation and delivery.
I love Pawame and it has been one of the most treasured possessions I’ve ever had. It has changed my life and [that of] my relatives. I am looking forward to owning other products through [the] affordable and flexible repayment plan by Pawame.

Margaret Tiren, Pawame customer
Pawame

Proving energy access and financial inclusion to off-grid communities in Kenya

Pawame is an off-grid energy services provider founded in 2016 and headquartered in UAE. They provide clean and affordable energy to off-grid households in Kenya. The company also develops and innovates software and hardware that drives mobile payment integration, and data collection and analytics.

Challenge / Problem

In Kenya over 30 million people don’t have access to electricity. Even in those areas that are connected to the national grid, electricity is often unreliable and expensive for lower income customers. Traditional and inefficient fossil fuels-based lamps are the most used source for lighting, and people travel significant distances to charge their phones. An average household spends over US$18 a month for lighting and mobile charging.

Solution

Pawame offers clean energy solutions with an affordable payment plan to bring solar power in remote communities in Kenya. The company sells solar home systems that include lights, radio and an optional TV. All their products are Lighting Global* certified. The solar systems are offered with a rent-to-own business model which allows customers to pay their purchase through small installments.

Their delivery model is based on a network of sales agents and technicians that serve the communities where they live. These grassroots sales organization approach means that products are accessible to those in the 14 Kenyan counties in which they operate. All sales agents and technicians receive initial training and thereafter are mentored by the team leader.

In addition, they have a culture of promoting managers from within their own ranks, from agents to team leaders, team leaders to country managers and so on.

Outcomes

Pawame is successfully entering the off-grid market and their value proposition is being a ‘value chain specialist’ focused on excellence in distribution, financing and after-sales service. Their innovation lies in the PAYGO financing mechanisms and they are planning to eliminate upfront down payments. Pawame’s work force is currently 33% female, and although they have not yet adopted specific measures to include women in the energy value chain, they are aiming at expanding their co-operation with women’s groups. The company is currently refining the credit/financing side of the business and they are hoping to expand quickly beyond Kenya. Pawame is also serving displaced people in Kakuma refugee camp.

Key lessons learned

• As affordability increases and customers become aspirational, tech driven measures to assess their creditworthiness will be increasingly important; or the alternative will be to specialize the training of sales agents to become loan officers, as they are the first line in building a healthy loan portfolio for the customers;

• Awareness of clean energy products is high while awareness of the value building a good credit history and good repayment habits is still lacking.

• Building a highly motivated and high performing field sales organization still remains the greatest challenge.
We’ve gone from 7% to 42% female representation in our Pollinator team in the past year. We are excited about how far we have come on this journey, but it was definitely not easy and we are nowhere near done.

Alexie Seller, Pollinate Energy founder
Pollinate Energy

A distribution network that brings life-changing products to people living in India’s slums

Pollinate Energy is a social enterprise with a mission to improve the lives of communities in India’s urban poor. Pollinate Energy employs a network of local ‘Pollinators’ to distribute solar lights, and other sustainable technologies to households in urban slums. The organization has recently joined forces with Empower Generation.

Organisation

Pollinate Energy is a social enterprise based in Australia and India. It promotes clean energy use through distribution of cooking and lighting products that address climate change. Pollinate Energy focuses on creating a network of entrepreneurs that sell clean energy products in urban slums in India.

Challenge / Problem

An estimated 700 million people in India still rely on solid fuels and traditional cookstoves for domestic cooking and a vast majority of them rely on kerosene for lighting. These traditional technologies and practices cause indoor air pollution due to emission of harmful substances such as carbon monoxide. Exposure to these pollutants has a multitude of detrimental health impacts. Unfortunately, this population is usually not educated on alternative energy efficient products that are affordable, cost effective and can improve their lives. Additionally, they have little access to finance to enable purchase of clean energy cooking and lighting products.

Solution

Pollinate Energy brings life-changing products- such as solar lights and improved cookstoves for families living in India’s urban slums, Pollinate Energy is the missing link in the chain that allows them to access, understand, and afford household clean energy products. Products are distributed through a unique network of local entrepreneurs or ‘pollinators’ - a predominately woman-led sales force - who either own their own franchise or are gainfully employed. The company focuses on local men and women from disadvantaged backgrounds, who are empowered with skills and knowledge necessary to sell and service clean energy products. Pollinators offer payment plans to address products affordability, and for post sale servicing and support for sustainable use. Pollinators work directly with families in their homes providing education on products specifications and use. This empowers families to create cleaner, safer and healthier homes.

Outcomes

Since 2013, Pollinate Energy has sold over 31,283 products and have reached over 143,000 people in India. Environmentally, the proportion of households using kerosene has reduced from 89% to 7% leading to a 2.71 million kilograms of CO2 saved.

Economically, the program has seen a reduction of household expenditure with recorded savings of US$ 1.52 per household per week. In coaching and mentorship, over 200 micro-entrepreneurs were supported to build skills and businesses.

Key lessons learned

- Focusing on high quality products contributes to high customer satisfaction, increased sales and low returns of products
- Empowering local entrepreneurs is a positive force of change in urban poor communities
- Financial support through provision of longer repayment plans increases number of products sold;
- Setting targets for including women in the workforce and making the team accountable helped increasing women representation.
Power for All
Power for All promotes distributed renewable energy by advocating for policy changes, sharing knowledge for market development, and by partnering with the public and private sector.

Challenge / Problem tackled
Hundreds of millions of women and girls in developing countries are plagued by energy poverty, further intensified by gender inequality. 7 out of 10 people living on $1 a day are female. Yet women are also more likely to be the primary energy managers in their communities.

Key activities / solutions
As part of their policy work, Power for All advocates for engaging more women in renewable energy value chains. For example, in Nigeria they organized a workshop in partnership with the Nigerian Women Trust Fund—a gender empowerment and political advocacy group—in order to engage more women and enable their voices to be heard in the energy access debate.

“Empowering women through increasing access to clean and affordable energy is in itself a driver for change.”
Wanjira Mathai
The Informal Sector where many women derive their livelihoods is labor intensive. Addressing access to sustainable energy sources for productive activities will make labor more efficient and increase their profitability.

Lydia Muchiri, Practical Action
Practical Action Eastern Africa

Scaling up energy access through women’s economic empowerment in Kenya

Practical Action partnered with the Sustainable Community Development Services (SCODE) and with the support of ENERGIA International, to empower women entrepreneurs in the energy value chain and to advocate for the adoption of Women Economic Empowerment (WEE) approaches in energy service delivery and planning in Kenya.

Organisation

Practical Action is an international NGO headquartered in the UK, that challenge poverty in developing countries through the use of technology across different sectors. In East Africa, Practical Action, with the support from ENERGIA, is working with SCODE with the objective of supporting women’s empowerment through enterprise development in clean energy access markets.

Challenge / Problem

As in many other African countries, in Kenya the lack of modern energy access harms the health of women and children who still rely on kerosene for lighting, wood and charcoal for cooking. Women are mainly responsible for fuel collection, and the time dedicated to these activities has a strong impact on women and girls’ educational and economic opportunities. In addition, women face many challenges which prevents them from benefiting as energy entrepreneurs. Their lack of property ownership affects their ability to access financing, moreover, they lack technical and business development skills and are rarely involved in energy policy and project planning.

Solution

Practical Action uses an enterprise development approach that targets women, aiming at creating a self-sustained industry in the cookstove, biomass briquettes and solar technology market. Practical Action provides targeted support to women entrepreneurs including business development, technology and self-leadership trainings. The women entrepreneurs also get market development support, personalized mentorship as well as access to finance. In addition, Practical Action implemented a national public-awareness campaign dubbed “WEEWorks” to elevate critical issues on energy poverty and gender and the potential that energy has to empower women economically.

Outcomes

The organization has been working with existing micro and small enterprises owned by women in Kenya and has empowered 771 women entrepreneurs, creating 430 jobs and benefiting 1,530,536 in Kenya. Practical Action and SCODE worked closely with the Ministry of Energy and other partners to mobilize CSO inputs into the development of the SEforALL Action Agenda and Investment Prospectus, provided direct technical support to mainstream gender in the documents, leading to prioritization of clean cooking and decentralised energy delivery models. Furthermore, County Governments were sensitized on energy, gender and its nexus with other key sectors. The WEE Works national campaign reached 2.3 million people.

Key lessons learned

- Uptake of products sold to women is higher when women entrepreneurs are involved;
- Improving income of women translates into an increased investment in family and their wellbeing;
- There is need for sustained advocacy and lobbying for gender mainstreaming in the energy sector as well as for support of women’s involvement in energy planning;
- Building on existing local women networks provides a sound base for mobilizing financing to support women led enterprises.
Before clean cook stoves, we had to travel about 4km to fetch wood and were attacked by local population.

Fatuma Mohumed, featured on Ashden Award video 2008

Photo: Project Gaia
Project Gaia

Eradicating energy poverty by promoting sustainable cooking fuels

Project Gaia aims at eradicating energy poverty by providing access to clean cooking stoves, powered by sustainable alcohol fuels that are clean, safe and efficient. The organization’s approach tackles energy poverty by creating opportunities to enhance food security and energy independence.

Organisation
Project Gaia is a non-profit organization with headquarters in the US and that operates in several countries in Africa, Latin America, India and Asia. Their mission is to change the face of energy poverty by promoting clean, safe, and efficient cookstoves powered by alcohol fuels.

Challenge / Problem
In many developing nations, most of the responsibility for cooking and collecting firewood in dangerous conditions falls on women. They sometimes walk for 10km to gather wood and they walk together to avoid attacks. Smoke from wood and charcoal stoves causes 4 million deaths each year.

Ethiopia is very vulnerable to deforestation and climate change yet 95% of its population burns solid fuels for household energy. In areas with increasing deforestation, women struggle to gather wood. They spend many hours every day cooking with firewood and are exposed to dangerous levels of pollution. The burden of gathering and cooking with wood prevents women and girls from pursuing an education or a source of income.

Solution
Project Gaia tackles energy access by providing clean cooking solutions in underserved parts of the world. In Addis Ababa, Ethiopia, the organization works with a cooperative of 4,000 women who were former fuelwood carriers. They are helping them to build and run an ethanol microdistillery and a stove business. The distillery is owned and operated by women’s cooperative and women become critical agents in the ethanol value chain.

Project Gaia is also an official implementing partner of the United Nations High Commissioner for Refugees (UNHCR) and the organization works to bring modern stoves and fuels to households in refugee camps in Ethiopia, Kenya, Eritrea and Sudan.

Outcomes
Project Gaia’s approach encompasses several best practices for accelerating access to clean energy technologies and fuels. The organization works to raise awareness of alcohol fuels, supporting job creation and local manufacturing, and by replicating successful projects.

In Ethiopia, Gaia Association has provided over 9,000 cookstoves and 4 million liters of ethanol fuel to over 40,000 refugees. The project has created 26 full time and 30 part-time jobs, of which 60% are women. Many refugees attributed decreased incidences of sexual and gender-based violence and increased school enrollment to Gaia’s activities in the camps.

Key lessons learned
- Women play a key role as community leaders in the refugee camps and they can promote stove safety training and proper fuel handling. This resulted in an accident-free record in the camps;
- Women’s associations, such as the Former Women Fuelwood Carriers’ Association in Ethiopia, play an important role in last mile distribution of ethanol fuel to client households.
We recruit, train and support women entrepreneurs to sell clean energy products. These women are trusted in their communities. When they come with a new product, people listen.

Olasimbo Sojinrin, Solar Sister
Solar Sisters

Eradicating energy poverty by empowering women as energy entrepreneurs and leaders

Solar Sister is the world’s first women-led and women-focused organization working to unlock women’s sustainable energy entrepreneurship and leadership at scale. Their last mile distribution network eradicates energy poverty in some of the world’s hardest to reach areas.

Organisation

Solar Sisters’ is a non-profit organization whose mission is to eradicate energy poverty by empowering women with economic opportunity. Based in Tanzania and Nigeria, Solar Sister has established a network of over 2,600 women entrepreneurs in Tanzania, Nigeria, and Uganda.

Challenge / Problem

In Tanzania, Uganda and Nigeria, as in many parts of Africa, grid electricity coverage remains sparse. Low-income customers rely on kerosene lamps, inefficient stoves and polluting and dangerous fuels for lighting and cooking. While households lack access to modern energy services, women in these contexts lack access to economic opportunities.

Solution

Solar Sisters taps into the power of women’s social networks to bring energy access to remote rural communities. The organization supports women to get access to training, financing and business opportunities through Business Development Associates (BDAs), who in turn recruit, train and support groups of local women entrepreneurs. Solar Sister entrepreneurs buy products (solar lights and cookstoves) to then sell them in their communities.

The organization adopts a strong ecosystem approach which includes partnerships with technology manufacturers such as d.light and Sun King, the establishment of local distribution network, and advocacy activities.

Their advocacy work aims at sharing evidence and best practices to support the business case for women’s involvement in clean energy value chain. Solar Sisters’ flagship campaign Women + Energy: WE Shine, supported by ENERGIA, shed light on the impact of women entrepreneurs in changing lives in Nigeria and Tanzania.

Outcomes

Solar Sister is playing a crucial role in bringing clean energy to hard-to-reach communities that have few other options for clean energy access. Their women-led entrepreneurship model has reached over 1 million customers over three countries. Their unique model of recruiting, training and supporting women entrepreneurs creates a number of benefits at the individual, household and community level. Income and autonomy, as well as a larger role in household decision-making improves. Women customers with access to energy earn 59% higher wages than those without, and their personal and social wellbeing improves. Female entrepreneurs expressed changes in their self-image and perceived agency, benefiting from confidence building and leadership abilities that influence an increased sense of status in the community.

Key lessons learned

- Rural customers place great importance on buying products and having after-sales services from someone trusted;
- Women with increased income play a larger role in household decision-making;
- Women entrepreneurs are penetrating into markets and communities that had few options for clean energy products;
- There may be gender bias when it comes to the perceived capability of a salesperson.
I know it might sound funny, but it was one of my greatest achievements when I was able to open my own bank account, thanks to my steady income with SOLARKIOSK. You can’t believe how proud I am. I have managed to help my parents get electricity and pay the school fees for my young brother. My family respects me because instead of being a burden, I always come with solutions and financial support.

Jeannette, SOLARKIOSK operator in Rwanda
SOLARKIOSK

Providing energy services and entrepreneurship opportunities to off grid communities

SOLARKIOSK provides clean energy services, quality consumer goods, and sustainable solutions to Base-of-the-Pyramids (BoP) communities across East Africa, matching a smart solar-powered technology design with an inclusive business model.

Organisation

SOLARKIOSK, a company headquartered in Germany, developed an award-winning technology and an inclusive business model to bring power and opportunities to off-grid communities. Since 2012, the company has established five country subsidiaries and is involved in projects on three continents, and has reached an estimated 5 million people.

Challenge / Problem

SOLARKIOSK addresses the demand for modern energy services in off-grid BoP communities that are left in the dark due to the vast costs of building the traditional grid infrastructure. Even with an established grid, connectivity is often not affordable and unreliable in many developing countries. The continuous costs of unsustainable energy alternatives significantly reduces local income and have a negative impact on health and the environment despite the abundance of sunshine in many BoP regions, which is the key resource for a sustainable and decentralized energy solution.

Solution

SOLARKIOSK has pioneered energy provision through a scalable, modular technology solution that brings electricity and energy services in rural off grid locations. Their offer is centered on the E-HUBB, a solar-powered kiosk with a flexible structure that can be customized in providing energy services, solar lamps, solar home systems and other sustainable products to BoP communities. The business model involves an agent system of local entrepreneurs that run E-HUBBs in their communities. Each E-HUBB can be customized to provide access to internet services, access to solar-powered water purification systems, solar products sold with warranties, cooling and storage for medication.

All SOLARKIOSK operators receive extensive business and technological training, covering topics such as business management, solar products, computer skills, financial basics, Point-of-Sale systems, logistics and energy management.

Outcomes

SOLARKIOSK’s solutions have impacted 5 million people in 11 countries via the establishment of 230 E-HUBBs. 215 women are empowered as operators and assistants.

The company has impacted communities by providing not only clean energy services, but also social and economic development opportunities. For each community where the E-HUBBs have been installed, SOLARKIOSK has created 4 direct jobs and impacted an average of 25,000 people.

Key lessons learned

• SOLARKIOSK gives a platform where local women showcase their abilities in traditionally male dominated rural business communities;

• Recruitment of local women as kiosk operators is in partnership with the village representatives;

• A core leadership of women at the management level of SOLARKIOSK assists in communicating with kiosk operators and resolving challenges and barriers, such as motherhood and other unique challenges facing women in the value chain.
Making the technologies available is one thing, but making them accessible is where success really lies.

Wanjira Mathai

Sollatek Kenya
Sollatek operates as a wholesale & distribution outfit, partnering with technology manufacturers and selling their products through a region-wide network of distributors to the last mile customers. Headquartered in Kenya, they operate over East Africa.

Challenge / Problem tackled
A large part of the off-grid population in Kenya lives in remote areas, and the lack of disposable income represents a strong barrier to the adoption of renewable energy technologies.

Key activities / solutions
Sollatek offers a wide range of high quality solar products through different distribution models, including a sales agents-based solution that reaches rural Kenyan population. Some of the trained entrepreneurs are women and they champion profitable marketing strategies by tapping into women's networks to sell their products. In addition, women are represented within the top 3 performers in monthly sales.

“Making the technologies available is one thing, but making them accessible is where success really lies.”

Wanjira Mathai
The training has triggered positive changes in the family’s dynamics of Sakhis’ households, allowing women to have a greater role in family decisions. “I have not only become economically independent but also have a greater say in my family decisions now.”
Sakhi Rekha Devi, recipient of SSP training under the wPOWER program in India.
Swayam Shikshan Pravog (SSP)

A grassroot approach that enables women to become clean energy entrepreneurs and changemakers in their communities

SSP empowers grassroots women to become entrepreneurs and leaders in their communities by facilitating women to lead self-help groups, social enterprises and community-centered initiatives. SSP leads the wPOWER program in India and facilitates the creation of a market ecosystems for clean energy products.

Organisation

SSP is an organization based in Pune, India, that promotes grassroots women entrepreneurs and leaders to provide clean energy, water and sanitation, agriculture and nutrition, community resilience and preventative healthcare services. The organization is active in several marginalized regions in India and partners with a consortium of 5,500 self-help groups.

Challenge / Problem

Millions of households in India still lack access to modern energy services and suffer from unreliable power provision while being more vulnerable to the risks of climate change. Clean energy technologies such as improved cookstoves and solar systems are often not available in many communities and their demand remains low due to a lack of awareness. Women play a critical role in household energy dynamics but are often excluded from engaging in productive activities because of gender and social roles and for the lack of opportunities to initiate and scale energy businesses.

Solution

SSP’s model includes several components. A capacity building program provides customized entrepreneurship development training, offering women with technical training, marketing, sales, business development and management skills. During the training period, experienced Sakhis are invited to share their experiences and motivate other women. Following the capacity building, women entrepreneurs or Sakhis, are provided with tailored coaching support for 6 months where a skilled facilitator helps them establishing physical presence, credibility and confidence in the communities with the aim of triggering demand for clean energy products. Other activities to create clean energy awareness include weekly market stalls, community group meetings, wall paintings and advertisement.

Outcomes

Since 2009, SSP has empowered more than 145,000 women farmers, entrepreneurs and community leaders, impacting the lives of over 5 million people in low income and under-served communities.

Through the wPOWER’s program, SSP has trained 1,010 Sakhis, who benefited from an average increase in income by 30% and reached over a million people through awareness initiatives. A large majority of Sakhis gained confidence to launch new ventures and developed a strong entrepreneurial spirit. Other indirect impacts include women’s gained legitimacy and authority with the family regarding personal initiatives and family’s decisions, as well as higher respect and new engagement opportunities in the community.

Key lessons learned

- After the training Sakhis women tend to be more involved in the community, by joining government programs such as Panchayat and self-help groups;
- Most women felt they gained independence and responsibility in their families, and they felt more respected and involved in the community;
- Many affirmed that another source of income was needed to complement earnings.
Manufacturing and distribution of briquettes made from peanut hulls and adapted cooking stoves in Senegal.

Project implemented in collaboration with Micro Projects
Synergie Solaire
Endowment fund of the renewable energy sector

Synergie Solaire provides human, financial and technical resources to support NGOs working on health, education and economic empowerment, strengthening their capacity to implement energy projects and to guarantee long-term sustainability.

Organisation
Synergie Solaire is an endowment fund that supports electrification projects, in collaboration with NGOs and experts of the renewable energy industry, with the overall goal of tackling energy poverty. Based in France, they work with partners in 20 countries in Africa, Asia and Latin America.

Challenge / Problem
Energy access plays a key role in economic and sustainable growth in developing countries. Only in Africa, 620 million people live without access to reliable electricity. Synergie Solaire bridges the link between humanitarian and social projects, with sustainable energy needs.

The main barriers that Synergie Solaire is addressing are: access to financing for both major electrification projects and micro-projects; the need for technical expertise and monitoring technologies to ensure long-term sustainability.

Solution
Synergie Solaire's unique approach consists in bringing together over 160 companies from the renewable energy sector and raising companies' awareness with a partnership structure.

Their goal is to support NGOs that implement renewable energy projects with a 360° approach that includes: financing, access to high quality products, technical expertise to implement projects, monitoring to ensure long-term viability. Key criteria used for the selection of projects include a targeted focus on women and the involvement of women's groups. An expert committee carefully assess projects looking for quality certified products and in some cases technology innovation. Synergie Solaire also provides monitoring services and technologies which enables the supported organizations to ensure maintenance and quality of the offer.

Outcomes
To date, Synergie Solaire has supported 162 green businesses, including 40 NGOs and 58 projects implemented over 20 countries of intervention. The organizations supported by Synergie Solaire have impacted 400,000 beneficiaries.

The supported projects include a solar training center for women and electrification of their villages in Burkina Faso, implemented through Barefoot College. The project trained 50 women engineers over 2 years and will connect 2500 households with electricity.

Another project, implemented in Mali by the NGO Un Enfant Par La Main, aims at equipping a maternity centre for women with solar energy.

In Uganda, Synergie Solaire is supporting a project implemented by Stiftung Solarenergie for job creation through the support of local SMEs and solar entrepreneurs for decentralised energy access.

Key lessons learned
• Access to subsidized resources is necessary to launch women entrepreneurs, but with a goal of financial sustainability of their company;
• The projects supported must necessarily provide extra income for women in order to be sustainable;
• Access to women’s training faces cultural barriers, such as training away from home.
Investing in women makes good business sense. Increasing evidence shows that gender inclusion supports business growth, and from a macro-perspective, investing in women is necessary for sustainable economic growth.

Stephanie Finigan, Manager of Operations
Value for Women
Promoting women’s empowerment and gender inclusion while unlocking the economic potential that women hold

Organisation
Value for Women (VfW) is a UK-based, global social enterprise that brings together a multi-disciplinary team of researchers, business experts and gender specialists to provide research and capacity-building that supports gender equity, women’s empowerment and entrepreneurship in the SME/SGB sector. They focus on improving business models, value chains and business operations in over 25 countries in Africa, the Middle East, Asia and Latin America.

Challenge / Problem
There is growing data pointing to a positive correlation between gender inclusion and increased business performance. However, that data is often limited to examining the impact of gender inclusion within large companies/corporations, and is also typically limited by viewing gender inclusion in business only in terms of human resources. In response to these limitations, the Shell Foundation and VfW conducted a 2017 pilot to test the business impact of gender inclusion strategies across varying aspects of business operations among clean energy SMEs.

Solution
VfW partnered with Shell Foundation to conduct a pilot to test the business impact of gender inclusion strategies across varying aspects of business operations among clean energy SMEs. The project involved five SMEs and explored 13 gender inclusion strategies across five key business operations areas: sales, marketing, market research, customer care, and hiring for sales teams. These strategies were customized in order to address their specific business needs and each strategy was assigned a set of measurable, business-specific targets or goals in order to determine impact. Each strategy developed was focused on the inclusion of women as either employees, or as customers. Examples include: customizing language during product education calls/pitches to ensure women were included, or designing specific sales tactics to address transportation issues which limit women sales agents from traveling long distances to complete sales.

Outcomes
The pilot found a number of positive results which can be tied to strategies tested. One organization testing the impact of training women direct sales agents to sell in strategic sales locations saw an increase in sales of 85%. Another organization saw a 33% reduction in the number of incoming technical support calls from clients after testing gender-specific messaging during customer service calls.

VfW has published a report outlining the pilot process and outcomes which can be found on the VfW website.

Key lessons learned
• Gender inclusion is not a “one size fits all” solution: gender solutions are most effective if they are customized for a business’s specific needs.
• Short trial periods can demonstrate quick wins: the pilot tested strategies and saw impacts in under 3 months;
• Having a “gender champion” is important for internal support within a business – and to ensure that impacts seen are communicated widely.

Value for Women’s mission is to promote women’s economic participation, leadership and entrepreneurship by bringing a gender lens to business practices.
Women for Women International
With 25 years of experience, WfWI has served more than 462,000 marginalized women in countries affected by war and conflict. They serve women in 8 countries by offering support, tools, and access to life-changing skills.

Challenge / Problem tackled
Over 65 million people have been displaced worldwide due to conflict and persecution; 20 million people in Africa are facing the threat of famine; and 2 billion people live in countries affected by fragility, conflict, and violence.

Key activities / solutions
WfWI adopts an integrated approach to equip women with vocational, business and numeracy skills and to inform them about their rights and wellbeing. The solutions aim at increasing income, improve health, decision making and taking advantage of supporting networks. WfWI also provide support to start cooperatives and Village Savings and Loans Associations so that they can grow their businesses.

“Bringing clean energy access to the grassroots is the great work of our time, and women as champions of clear energy and climate action, are the real heroines of this great work.”

Wanjira Mathai
The women have gathered together be pioneers of this clean cookstove. I see a lot of passion in them – passion to change lives, passion to go out there and talk to people about the usefulness of the clean cookstove – and I believe with time and with the enthusiasm I see in them, it’s going to go beyond the shores of this nation…clean cookstoves will become a household name.

Regina Poto, Financial Advisor for WISE
**Women’s Earth Alliance**

Supporting women leaders worldwide

Women’s Earth Alliance focuses on enabling women to become leaders in environmental projects, from sustainable farming to selling clean cookstoves. The mission of WEA is clear: when women thrive, communities, the environment, and future generations thrive.

**Organisation**

WEA equips women with the skills and tools they need to protect the earth and strengthen communities. WEA designs capacity-building trainings where women access skills and tools in appropriate technology, entrepreneurship, and advocacy. Based in the US, the organization is active in several countries in Africa, Asia and the Americas.

**Challenge Problem**

WEA tackles several environmental and social challenges that women face in different regions of the world.

Women make up 80% of the world’s “climate refugees” who have been displaced by climate change. Energy poverty largely affects women’s lives due to sickness and death caused by pollution from burning wood for cooking. Poor women are also burdened with the task of walking long distances to gather firewood.

Women’s lack of access to and control over resources limits their autonomy and increases their economic and environmental vulnerability. In addition, women’s voices are often excluded from decision-making at the local and global level.

**Solution**

In 2016, WEA launched a partnership with Women’s Initiative for Sustainable Environment (WISE) to hold capacity-building trainings for women leaders from Kaduna State in Nigeria to promote and sell clean cookstoves. **WEA designed activities that include financial management strategies, profit generation, clean cookstove technologies, leadership and entrepreneurship.** 30 women leaders were trained as part of the program, which also targeted their families and communities with complementary advocacy activities. **In order to overcome financial barriers, seed grants were provided to finance the cookstove purchase.**

**Outcomes**

Since 2006, over 5000 women have been trained directly by WEA, and they have gone to reach over 750,000 people with technologies, advocacy, business concepts and ideas that will further transform communities.

Under the WISE initiative, 30 women launched clean cookstove enterprises, reaching 13,000 people in Kaduna, Nigeria. Women have been equipped with training and the opportunity to purchase clean cookstoves and thus breathe cleaner air, reduce deforestation and increase household savings.

**Key lessons learned**

- Platforms for peer mentorship among women entrepreneurs, by leveraging local language and community methods, increase participation, morale, and sales;
- Entrepreneurs test different cookstove models at home before selecting models for sale, encouraging ownership, relationship building with vendors, and market testing;
- Networking and advocacy help women entrepreneurs increase their confidence and build valuable relationships;
- Building models for income generation are key to sustaining and scaling cookstove technologies.
World Agroforestry Centre

The World Agroforestry Centre (ICRAF) is a centre of scientific excellence that harnesses the benefits of trees for people and the environment. Leveraging the world’s largest repository of agroforestry science and information, they develop knowledge practices, from farmers’ fields to the global sphere, to ensure food security and environmental sustainability.

Challenge / Problem tackled

ICRAF is guided by development challenges such as poverty reduction, increasing food and nutritional security, and improved natural resource systems and environmental services.

Key activities / solutions

In the area of household energy, ICRAF has led initiatives on sustainable tree-based energy systems such as on-farm tree production for bioenergy including charcoal, firewood and liquid biofuels in Africa and Asia, and research to develop energy-efficient cooking technologies.

“We must accept that wood fuel is not a transitional fuel. It is here to stay for the foreseeable future. What we must do is innovate around wood fuel for efficiency and sustainability.”

Wanjira Mathai
World Energy Council - Energy Society of Kenya

The World Energy Council is the largest global network of energy leaders and practitioners promoting affordable, stable and sustainable energy systems. It involves more than 3000 member organizations and nearly 100 member committees.

Challenge / Problem tackled

The WEC’s mission is to promote sustainable supply and use of energy, by addressing multiple needs of this sector, such as producing and sharing data and research, and the facilitation of stakeholders’ assembling and collaboration.

Key activities / solutions

The Kenya Member Committee, known as the Energy Society of Kenya, brings multiple stakeholders within the energy sector with the purpose of promoting sustainable energy systems. In August 2018 they intend to launch the World Energy Academy which will equip professionals with knowledge on core principles of the energy sector.

“For women to transition to a low carbon economy, clean energy technologies must be made available and affordable, globally”

Wanjira Mathai


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Shankar A., Onyura M.A., Ojode M., and Milliam E.


About wPOWER

The Partnership on Women’s Entrepreneurship in Renewables (wPOWER) is a U.S. Department of State funded project, with a mission to promote the central role that women must play in clean energy entrepreneurship and in addressing climate change, and a vision to empower 8,000 women in clean energy entrepreneurship to deliver clean energy access to 3.5 million people globally by 2018.

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