

Gender dynamics and off-grid electricity: Lessons from Tanzania



A welcome from Harriet Lamb, Ashden CEO

As you know all too well, solar enterprises are working flat-out to bring their products and services to as many people as possible, in an often challenging environment. SEforALL's latest report Energizing Finance shows this effort is more vital than ever. It reveals investment in sustainable energy access in Sub-Saharan Africa is weak and, in some cases, declining. But there is a desperate shortage of data on how gender dynamics affect access to off-grid electricity, information that could help companies bring a better service to more customers. Our research is designed to bridge that gap.



It underlines an uncomfortable truth: that the impact of energy access is heavily dependent on social factors. Key research findings include the fact that for most women surveyed, access to solar had not created more free time or helped them complete the most demanding daily tasks. And with many families restricted to limited amounts of energy, we heard how women deprioritise their own needs over those of other family members. What do customers want? The answers include a more reliable service and loans to make appliances affordable. There are huge opportunities for enterprises that can really understand and respond to these challenges.

This research doesn't give us all the answers – but it helps us develop a crucial conversation. In carrying it out, we aim to create more energy connections and more satisfied customers. Please join us, share your insights and let's make more progress together.

Research overview

This summer Ashden completed a three-year study examining the impacts of solar home systems and solar micro-grids in rural Tanzania. The research reveals how women and men are affected differently by the arrival of off-grid electricity in their homes. It aims to guide work by solar companies, policymakers and others so that women in East Africa and beyond are meaningfully included in the clean energy transition.

The study involved 1260 household surveys, 16 focus groups and 66 semi-structured interviews in the regions of Kagera and Morogoro. Fieldwork took place between February and June 2017, and between July and August 2019. The project was funded by the Wallace Global Fund, the IKEA Foundation and the UK's Department for International Development, and supported by the Institute of Development Studies and Sussex University. The full report will be published before the end of 2019.

What did we find?

How women and men make decisions about solar

The dynamics of 'joint decision-making' are complex

Some answers suggested energy related decision-making was relatively balanced (on average across all four regions 55% of people said they made energy related decisions together). However, when questioned about their response, most women said that when decisions were made together the husband had the final say as the main earner. Some women said the decision was taken by the whole family at every stage, and others were informed they were getting solar by their husband.

Clearly, the decision-making process is rarely the sole responsibility of the women or man, nor do metrics such as 'joint-decision making' capture the complex negotiations that shape the purchase of solar.

Different energy types have different gendered decision-making dynamics

Acquiring charcoal and firewood is usually done by women and paid for with their own cash. However, acquiring solar, making payments and maintaining the system were considered to be a man's responsibility – men overwhelmingly put forward the idea of getting solar and, while they often involved their families in the decision-making process, it was ultimately their final decision.

Access to solar doesn't necessarily mean use is equally distributed amongst members of the household

The positive effects of solar on women's empowerment are limited when they are not involved in, or de-prioritise their needs in, decisions about how energy is used. For example, many women directly requested extra bulbs to light their kitchens from the companies or commented on how useful a bulb in their kitchen would be, as currently bulbs are placed in the home's communal spaces. There are also trade-offs in terms of who can use solar and when, because of the limited number of hours solar is available, particularly with basic systems. Some women de-prioritised their own needs and limited their energy access, avoiding solar use during the daytime so their children, spouse or other members of the household can benefit from the limited hours available.

Household finances

Women make a significant contribution to household income in all four regions

Women significantly contribute towards household income, more than 50% in all regions and up to 70% in one of them. Yet women were more likely to describe themselves as 'unemployed'. This is likely to be because 'employment' in this context is often associated with formal, salaried work. Without considering informal sector jobs which may not even be reported, overall, women may contribute more than men to household income. Whether women get to keep their income or choose how it is spent is unclear. Solar payments often fell to women when men did not have enough to pay the bills, even if this was normally considered as a man's responsibility.

Gender differences in financial inclusion were most stark in the poorest region

The solar home system control group and the poorest region had the starkest gender difference in MPESA account ownership (31% of women, 84% of men) and bank account ownership (4% of women, 34% of men). Loan requests were low across all regions, with women more likely to be successful. In the region where mobile phone ownership was a pre-requisite for buying a solar home system and paying the bills it generated, only 46% of women owned a phone – compared to 90% of men. Mobile phone access was very high (100% for men in all regions, and between 100% and 83% for women). Men tended to use their phones more for payments and using the internet, compared with women.

Solar accounts were also owned almost exclusively by men, and training was not evenly distributed

Most of the interaction between the companies and customers was with the man of the household, even if women and men in the same household were equally responsible for paying bills and deciding when to top up. Reasons given were because the man was the head of the household and he was responsible, but also in a few cases because he was the person with a mobile phone. There was also a gap in training women on using their new systems, meaning women sometimes relied on their husband or children to fix and top up the system.

How solar impacts women and men differently

Socio-economic status has a greater impact on women's free time than access to solar by itself.

Access to solar had not impacted the gender imbalance in available free time – most women at both the baseline and endline reported between two and three hours of free time per day. Women who stated they did have more leisure time (regardless of solar access), were in the minority and tended to be of a higher socio-economic status. Poorer men also had less free time, but more so than women. Some customers reported to have a housekeeper or hired farm labourers, thus allowing time for other activities such as reading or watching television in the evenings.

More hours of productive time, without a change in existing gender norms, increases the double burden (domestic chores coupled with paid work) already placed on women's time

The baseline findings revealed that women structured their working day to accommodate a 'double-burden' (domestic chores coupled with paid work), for example by delaying the start of their working day and finishing early to carry out chores. It also uncovered that the most time-consuming chore for women in the study was collecting water – over a third of households in all regions walked over 100 metres to collect water – a task which often falls to women and girls. The endline results found little evidence that access to solar had shifted this burden, altered existing gender roles or reduced the most demanding tasks traditionally carried out by women, except for the small amount of choice as to when to carry tasks out.

Marketing and outreach were more likely to be targeted at places frequented by men

Only two respondents mentioned they had found out about solar from women's groups. No one interviewed had come across a women sales agent, although remote customer service teams were more mixed. Multiple respondents said they had heard about the micro-grid company at local village meetings, which tend to be male dominated spaces.

In both the solar home system and micro-grid regions, women who could afford time-saving appliances benefitted the most from electricity

Customers that particularly benefit from the micro-grid region could power appliances such as irons, compared to those who could not afford, or had not yet purchased appliances benefitted most. For most women from households with basic systems or micro-grid access with few appliances, the increased flexibility was used to spread chores into the evening or start chores earlier in the morning, and as a result tended to work for longer periods of time. Nevertheless, some women mentioned they enjoyed watching television and had some time in the day when they could listen to the radio. There was a strong call for more appliances for solar home system customers from men and women, and demand for the solar companies to offer more loans to make appliances affordable.

Next steps

This year and next we are sharing our findings. We'll do this through events, briefings, digital storytelling and more. But we still don't have the full picture. We need the front-line insights of practitioners like yourselves to build on the fieldwork we've already carried out.

Please tell us:

- your insights into gender dynamics
- the questions about this issue you still need answered
- how politicians, investors and NGOs can help you serve woman customers.

Join the conversation on social media, using the hashtag #GenderandEnergy.

Or contact Louise.Hosegood@Ashden.org to see how we can work together on this crucial issue.

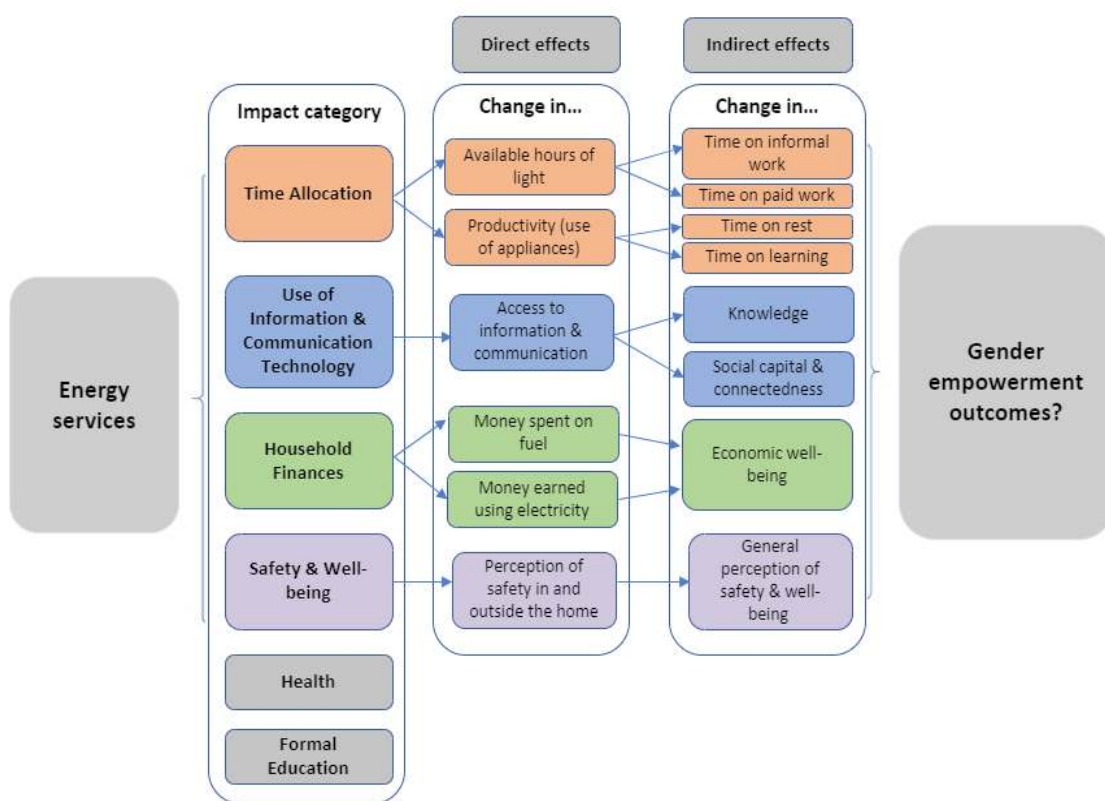
We'd love to collaborate on blogs and opinion pieces, share your insights at events, and build new connections that help your enterprise flourish.

Find the latest project news and more about Ashden at www.ashden.org.

Research methodology

A two-part baseline/end line approach was used to develop a picture of life before solar access, then revisit the same communities once they had used it over a substantial period. A treatment and control group was used for both solar home systems and solar micro-grid regions to compare experiences of solar customers and non-customers with comparable socio-economic profiles, however in practice, control groups were poorer than their respective treatment groups.

Our research framework hypothesises some of the ways in which access to solar home systems and solar micro-grids have an impact on women and men. The social impact areas of interest are time allocation, communication and information technologies (phone charging, TV and radio), household finances (through a change in income or spending on expensive fuels such as kerosene) and perception of safety and well-being.



Hypothesis of impacts of access to solar home systems and solar micro-grids

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