

POWER FOR ALL RESEARCH SUMMARY

Owning a modern off-grid energy product provides mostly positive changes to households while closing the gap in the global energy divide.

**POWER
FOR
ALL**

60 _ decibels

72%

OFF-GRID ENERGY CUSTOMERS
HAVE CLIMBED UP THE ENERGY
LADDER

\$13.36/week

INCOME GROWTH FROM
PRODUCTIVE USERS

86%

OFF-GRID ENERGY CUSTOMERS
FEEL SAFER IN THEIR HOMES
AND COMMUNITIES

Off-grid energy products such as cookstoves, appliances, solar homes systems (SHS), solar lanterns and mini-grids serve the energy needs of thousands of consumers globally. How the social impact of off-grid energy products is evaluated should evolve as the sector develops new products and consumer preferences change. In its latest report, Why off-grid energy matters, 60 Decibels (60dB) interviewed 35,000 off-grid energy consumers in sub-Saharan Africa and South Asia to analyse this impact as well as customer experience.¹

88% of the consumers using off-grid energy products and services have seen a positive shift in their and their family's quality of life, in terms of safety, productivity, health, carbon emissions, and education.

- » 72% of the off-grid energy customers surveyed have climbed up the energy ladder, meaning that they have obtained access to new sources of energy that provide improved reliability, brightness and safety. (23, 27)
- » 18% of the off-grid energy consumers surveyed are using the new energy sources for income-generating activities such as bars, restaurants, and kiosks. Business owners who used energy products at work saw US\$13.36 per week increase in revenues. (23, 27)
- » 48% of customers surveyed who switched over from kerosene to modern lighting, reported improved health. (23,27)
- » Customers who switched from kerosene to solar lanterns contribute to a 461kg decrease in CO₂e and black carbon emissions. (23,27)
- » Due to better lighting provided by off-grid energy products, parents reported that their children were able to study for approximately 20 minutes extra each day. (23, 27)
- » 86% of off-grid energy customers reported feeling safer in their homes and communities and experienced fewer household accidents such as fires and burns. (23, 27)

Off-grid energy products differ in their level of social impact as experienced by consumers. Solar lanterns stood out with regard to impacts on health, SHS on productive use and mini-grids on inclusivity.

- » Solar lanterns have the largest positive impact on health as they are frequently customers' first use of an off-grid energy product. 97% of customers noticed improvement on health when they switched from kerosene to solar lanterns. (48)
- » SHSs make a lower contribution to social impact compared to other off-grid products. Customers in this sub-sector reported having the greatest access to 'good' alternatives, and the social impacts on health and the environment were limited as customers were likely to have already moved away from kerosene before acquiring home systems. (52)
- » Productive use of energy increases as the SHS size gets bigger: 8% for portable/multilight products (0.5-10.9Wp), 13% for small SHS (11-49.9Wp) and 26% for large SHS (50+Wp). (23, 52)
- » Mini-grids are one of the most income-inclusive off-grid solutions, as customers of all income levels can access mini-grid electricity. Most importantly, they offer great flexibility for customers who can adjust spending for the energy used due to the pay-as-you-go (PAYG) payment structures. (58)
- » 79% of the families with solar TVs experienced less stress and higher levels of engagement in politics (89%), current affairs (92%) and have better general knowledge (96%).
- » 67% of solar pump users stated increasing farm yields and 10% of farmers increased their incomes. (62)
- » 81% of cookstove customers reported time savings after using a clean stove, yet 51% were still using their old stoves for fuel-stacking. (66)

The social impacts of off-grid energy differ depending on the growth stage (characterised as: Blueprint, Validate, Prepare, Scale)² of a company, as well as its geographic location.

- » Generally as companies grow, the proportion of customers served who live below the poverty line declines.³ For companies in the "prepare stage", 46% of customers live below the US\$3.2 per person per day poverty line, while for more mature companies in "scale stage", 30% of

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customers live in relative poverty. (36, 37)

- » East Africa has higher kerosene lamp usage than India, where there is a higher grid-electrification rate and greater predominance of battery-powered torch use. As a result, there are larger impacts on CO₂e reduction among the companies working in East Africa than India. (38)
- » Inclusivity of companies also varies across geographies: the percentage of off-grid customers living beneath the poverty line is 29% in Kenya, 36% in India and 40% in Nigeria, lower than the national poverty rates of 47% in Kenya, 57% in India and 73% in Nigeria. (39)

While the off-grid energy sector had made great strides closing the energy access gap, the sector must still improve inclusivity in the following areas: inequitable access, debt overload to customers and unequal gender access.

- » Inequitable access: Despite greater access to credit and improved product development, 37% of the off-grid energy customers surveyed live below the poverty line. This compares to an average poverty rate of 60% in the geographies surveyed. (14)
- » Debt overload: In the off-grid energy sector, 67% of the customers are accessing credit facilities for the first time through (PAYG) financing. Loan repayment rates in the sector are high. However, 4% of customers interviewed said that their payments were “a heavy burden”, and 28% said their payments were “somewhat of a burden”. Moreover, 5% of families had to cut back on food to afford payments. (15, 24)
- » Unequal gender access: 68% of the off-grid energy customers surveyed are men. In 58% of households, men were the first to hear of an energy product or service, and 61% of the male customers made solitary purchase decisions. Engaging women in the sales activities, ensuring equal financing options for both sexes, and considering gender when defining marketing strategies are actions that can improve gender equality in energy access. (15, 25, 73)
- » For wider inclusivity in the sector, more accessible financing options, lower prices, smarter subsidy and wider distribution could be employed. (24)

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- » Customer experience of off-grid energy products and their perceptions of impact are highly correlated and contributes to understanding why impact happens.
- » 88% of off-grid energy consumers surveyed experience a positive shift in their quality of life. Impact areas differ across technologies, with solar lanterns having significant impact on health, larger SHS on productivity and mini-grids having more impact on inclusive access.
- » Greater inclusivity is needed in this sector. This can be done through, providing more accessible financing options, lower prices, smarter subsidies and wider distribution.

Sources:

1. Kat Harrison, Shahnaz Khan, Tom Adams, Sasha Dichter. “Why off-grid energy matters.” 60 Decibels, February 2020
2. From Blueprint to Scale: https://acumen.org/wp-content/uploads/2017/09/From-Blueprint-to-Scale-Case-for-Philanthropy-in-Impact-Investing_Full-report.pdf. 60 Decibels did this categorisation by asking both the companies and their investors what categories the companies fit in, and then sense-checked the results.
3. Using the World Bank international relative poverty line of households living on US\$3.20 per person, per day or less (2011, PPP prices).