



# Off-grid solar burundi

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Burundi is one of the least electrified countries in the world, with only about 11% of Burundi's 11 million inhabitants (or roughly 1.2 million people) having access to electricity. The vast majority of those with electricity - about 900,000 people - live in urban areas, where there is a 62% connection rate, versus only 3% in rural areas. This means nearly all rural households rely on firewood and other solid fuels for cooking and lighting, compounding the negative economic impacts that accompany a lack of electricity with the negative health and environmental impacts caused by burning these fuels. A need for rapid clean energy solutions is clear.

2018 access rates according to Tracking SDG 7.1.1. Our 2019 market assessment report found electricity total access 9%, urban 60%, rural access <2%.

This emissions estimate is calculated according to version 4.0 of GOGLA's Standardized Impact Metrics for the Off-Grid Solar Sector [considering products of .5Wp+] and assuming a lifecycle of 3 years.

Off-grid solar products could play a key role in closing the vast electricity access gap in Burundi - offering a rapidly deployable solution, which would benefit from the dense population concentration (470 inhabitants per square kilometer) and reliable sunshine.

So far, however, the penetration of quality-verified off-grid solar products in Burundi is very low, with only an estimated 50,000-100,000 products sold to date across the country (even the upper end of the estimate would represent only 5% of the potential market). Nearly all of the systems have been entry-level products like pico lanterns, sometimes with the ability to charge a mobile phone, with almost no uptake of larger solar home systems (SHS). This points to one of the key issues facing the off-grid market in Burundi: low affordability.

The majority of Burundians live in poverty. Food insecurity across the country is almost double the sub-Saharan average, with about 1.77 million people in 2019 needing humanitarian assistance, according to the Humanitarian Response Plan (HRP). As can be expected against this backdrop, household expenditures on consumer goods is low, greatly limiting the ability to pay for energy access products.

Despite these significant constraints, however, approximately half of Burundian households could - with consumer finance - manage the upfront cost of around US\$10 to purchase a small solar lantern. Adopting a PAYG approach that spreads the cost over a year or more would make a basic single solar lantern affordable to all households, whereas 60% of households could afford a single light with phone charging, and 40% a single light with a radio.

Of course, end-user affordability is just one part of the energy access puzzle, and suppliers have yet to enter the Burundian market in a significant way. Early efforts in the off-grid space by organizations such as the One



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Acre Fund, the World Bank, and EnDev, while benefiting some, did not drive a private sector presence.

Foreign exchange constraints has been cited as the primary deterrent to entering the market by the private sector, followed by low consumer demand, limited access to finance, and a lack of available market information

In order to close the information gap, the Lighting Africa program recently released our new report, Burundi Market Assessment for Off Grid Solar and Improved Cooking Technologies for Households to give companies a better understanding of the Burundian off-grid market potential. Taking both need and affordability into consideration, our report found that Burundi had a potential market of approximately 2.1 million households - or 100,000 products, but that only about 5% of that market has been tapped.

While the policy and regulatory frameworks for off-grid energy in Burundi are still nascent, the government has a clear commitment to expanding access to modern energy services. Burundi's Vision 2025, the five- year National Development Plan, and the 2011 Energy Policy Letter all underline energy access as a key national priority. The National Development Plan implementation plans are currently being created and are expected to include a defined role for off-grid energy technologies.

Government support for the off-grid sector, together with support from developmental agencies and programs like ours, can help channel the high-entrepreneurial spirit found in Burundi into expanding access to these life-changing devices.

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