

Supporting the East African Off-grid Energy Industry post COVID-19

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Summary

Access to affordable and reliable clean electricity services is critical in making communities less vulnerable to future climate and public health crises. The off-grid energy industry in East Africa has contributed to substantial progress and innovation in electrifying households and businesses. The impacts of the ongoing COVID-19 pandemic threaten to deter this progress in East Africa and elsewhere. However, recovery during and after the pandemic also offers opportunities to position the off-grid energy industry in ways that can accelerate the role of the sector in addressing multiple development goals. We suggest the following sector-specific and society-wide areas for policy support to ensure that the momentum for off-grid can be harnessed now and in the future.

- Sector-specific
 - Develop local off-grid supply chains and expertise
 - Encourage continued support from donors for the off-grid sector
- Society-wide
 - Integrate off-grid with society-wide goals
 - Connect off-grid with digital infrastructure



I. Introduction

Access to reliable electricity is essential in supporting multiple sustainable development goals. The nature of electricity access as an enabler for improving lives cannot be over-emphasised especially in times of crises such as the current COVID-19 pandemic. In sub-Saharan Africa, nearly 60% of health centres are unelectrified¹. Of those that are electrified, most do not have reliable electricity access which presents problems for the safe storage of vaccines and for the use of medical equipment such as ventilators.

In East Africa (Kenya, Uganda, Rwanda and Tanzania), the nascent off-grid energy industry was touted as key to achieving the region's universal electrification targets just before the pandemic. Due to their modular and decentralised nature, and for the most part affordability in comparison to the grid, off-grid solutions provide equitable, affordable and reliable energy access. Indeed, the Global Off-Grid Lighting Association (GOGLA) reports that in the last decade, off-grid energy companies electrified over 470 million people globally², with some 60 million from Africa alone³. Decentralised off-grid energy systems like mini-grids have been vital in supporting health care and agricultural sectors, potentially promising to achieve universal electrification, contributing to sustainable development, and paving the way for a clean energy transition in the Global South.

The IEA now reports that 30 million people in SSA are on the verge of falling back into energy poverty because of the pandemic⁴. Across the East African region, as the effects of lockdowns and travel restrictions bite, many off-grid solar companies are struggling to stay operational, putting at risk the hard-won gains in the sector. In addition to electrification, the off-grid renewable industry is key in creating green jobs thereby addressing the unemployment challenge in the region. Solar PV jobs employ over 3.9%⁵ of the African workforce with the off-grid value chain reported to employ over 77,000 in East Africa alone in 2018 projected to grow to 350,000 by 2022⁶.

COVID-19 threatens to undo and deter progress on multiple fronts. But the pandemic has also presented an opportunity for the connection between energy access and other SDGs (including healthcare, employment and poverty reduction) to be strengthened. In this policy brief, we use insights from interviews⁷ with stakeholders in the off-grid sector in Uganda as well as articles and documents related to developments in Kenya, Rwanda and Tanzania, to suggest ways forward. Our analysis suggests that there are both sector-specific and society-

wide interventions required to support a thriving off-grid sector. Sector-specific interventions include developing local off-grid supply chains and expertise in addition to continued support

¹ Health facility electrification in sub-Saharan-Africa

² Energy access sector essential to building back better

³ Off-Grid Solar Trends Report.pdf

⁴ The Covid-19 crisis is reversing progress on energy access in Africa – Analysis - IEA

⁵ IRENA (2019) Renewable Energy and Jobs: Annual Review 2019

⁶ Employment opportunities in an evolving market Off-grid solar: creating high-value employment in key markets

⁷ A total of 18 interviews were conducted between June 2020 and October 2021. Stakeholders included off-grid companies, donors, developmental partners and policy experts. The interviews focused on Uganda but the majority of the companies in the study have subsidiaries in other East African countries.

from donors, while society-wide interventions call for connection of off-grid with digital infrastructure as well as integrating the industry with broader society developmental goals.

II. Off-grid and the pandemic in East Africa

Like many countries across the world, all EA countries imposed lockdowns and travel restrictions to curb the spread of COVID-19. Some were stricter than others (see Table 1). In Uganda, for example, the government imposed one of the strictest COVID-19 lockdowns in the region. There were restrictions on movement. Everything from travel borders (from March 2020 to June 2020⁸), schools, places of worship and businesses (except those that were categorised as essential), was closed. Businesses in the off-grid sector were not initially considered as essential.

In early June, there was a phased re-opening and reinstatement of movement and public transport for all but the 41 border districts until October 2020. Until recently, a 9 pm curfew was still in existence, but a general lack of COVID-19 vaccines and very low vaccination rates (close to 1%), growth in infections, and the sprout-up of new, more lethal virus variants, saw the announcement of a second lockdown. The 6-week-lockdown was pronounced on 6th June 2021⁹ precisely 8 months since the previous one was lifted.

Uganda and Rwanda had the strictest lockdown measures in comparison to other countries in the region, followed by Kenya and Tanzania (Table 1).

Table 1: COVID related Responses and restrictions across East African countries

Restrictions in response to the COVID-19 pandemic	Level of disruption		
	Uganda	Kenya	Rwanda
Complete lockdown and business closures	High		High
Public transport ban and country border closure	High		High
Limited working hours and evening Curfew	Medium	Low	Medium
Public gatherings ban	Low	Low	Low
Interstate travel ban and country border closure		Medium	
<i>Tanzania never instituted a lockdown as the former president reportedly denied the existence of such a thing as a COVID-19 pandemic</i>			

These lockdowns and restrictions have had serious impacts on the population, businesses and the economy at large. Our interviews with stakeholders in the off-grid industry in Uganda show that the impacts on the industry were both direct and indirect (See Table 2). The direct impacts relate to the immediate government responses, and indirect impacts are the unintended outcomes to businesses trying to operate under the set restrictions.

⁸ President Museveni's 8th Address on COVID 19 and Lockdown Relaxation | Uganda Media Centre

⁹ Uganda-re-imposes-lockdown-beat-back-covid-19-case-surge-2021-06-06/

Table 2: Impacts of the pandemic on the Ugandan off-grid industry (Based on Interview data)

Impact	Type	Exemplary quotes
Direct impacts	Business closures	<i>“For about six weeks, the entire business had to close we weren’t at that point categorized as essential service. And all installations and all technical support, unfortunately, stopped.”</i>
	Limited company operations	<i>“We had to scale down. So, where you’d deploy 8-10 to run a mini grid, the pandemic restrictions did not allow more than 3-4 people to be at workplaces at the same time.”</i>
	Delays in Procurements and product delivery	<i>“At the Uganda border already there’s a 7-kilometre build-up of trucks coming into the country and they’re estimating this takes around 7 days to clear”</i>
Indirect Impacts	Rise in operations costs amidst funding cuts	<i>“The cost of storage, the cost of keeping those batteries fresh, have all gone up. And on the other side, the income has not kept up.”</i> <i>“When the pandemic hit, a lot of donors, [...] rescinded their offers [...] switching all of their focus to COVID.”</i>
	No staff trainings	<i>“Unfortunately, we couldn’t do training for many countries during the pandemic, so many of the staff couldn’t come to the shop”</i>
	Rise in customer default rates	<i>“It was quite a large percentage of people who are not able to pay during that period”</i> <i>“We made zero sales in the month of April, first time we’ve ever made zero sales since [...]we started.”</i>
	Stigma of company operators in communities	<i>“Communities never accepted people from Kampala to visit because they felt like the cases were all in the city”</i>

The industry’s survival and operations relied on how swift off-grid companies responded and the kind of measures employed. A quick look at 2020 reveals a drop in off-grid market development which saw some 10-15 million individuals and 300,000 – 450,000 ventures missing out on clean energy access¹⁰.

¹⁰ Global_off-grid_solar_market_report_h2_2020.pdf

III. Policy Recommendations

Off-grid energy companies have adapted fast to the direct impacts of the COVID-19 crisis. Some of these impacts offer opportunities to position the off-grid energy sector in ways that can accelerate the role of the sector in addressing society-wide problems such as reducing poverty, inequality and unemployment. However, for this to happen, policy support will be crucial. We propose sector-specific and society-wide interventions for policymakers and donors to support a thriving off-grid sector capable of addressing multiple SDGs.

A. Sector-specific

1. Develop local off-grid supply chains and expertise by:

Shortening supply chains and strengthening regional and local manufacturing. The measures imposed to curb the spread of COVID-19 disrupted global trade, and organisations in the off-grid industry could not access energy products in time. From the interviews, many organisations importing solar products from Europe and China before the pandemic highlighted challenges ranging from high costs to long delays amidst pressure from clients. While some companies closed for a period, others sought new suppliers and manufacturers within the East African region. Most of the companies started new partnership deals with manufacturers in Kenya and Tanzania, with one interviewee reporting, “*What we have done now is, [...] we are working with another Tanzanian company, a manufacturer as well in Tanzania [...]. It does more of motorcycle batteries. Very similar to what the Chinese were giving us. We thought those motorcycle batteries may address the solar [battery] need that we have*”. This evidence indicates the need for regional governments to create an environment that allows local manufacturing and cross-border trade to thrive. It also presents an opportunity to develop local systems that can address circularity i.e., waste/resource use. The African Union recently launched the African Continental Free Trade Area (AfCFTA), enabling seamless trade among African countries. Initiatives such as AfCFTA will be more beneficial if individual countries create policies that promote and attract investments into local manufacturing. Regional governments could draw lessons from India, for example, where the production linked incentives (PLI) scheme boosted the country’s electronics manufacturing production which saw the growth in value of mobile handset manufacturing from \$3 to \$30 billion in 5 years ¹¹. Such support is urgent for EA to rebuild economies that are more resilient to future risks and crises.

Developing and training human resources that will engage in the clean energy transition. Access to people with the requisite skill set is one of the most important aspects of the off-grid sector. Much investment is required to set up solar installers and technicians’ programs to prepare them for the solar space job market. This will reduce company operational costs and ensure a thriving job market for the population. Initiatives such as these can also promote awareness of clean energy, a challenge that has plagued the off-grid industry for quite some time. Strategies that facilitate partnerships between the energy sector

¹¹ <https://www.meity.gov.in/esdm/emc2.0>

and EA countries’ education institutions will be key as we advance. As the COVID-19 crisis has shown, most people could not access power because of a lack of access to repair services. Hence, creating an ecosystem for quality and repair can go a long way in ensuring that people and local businesses access reliable electricity, which is vital for the recovery process.

2. Encourage continued support from donors for the off-grid sector by:

Increasing understanding of recent reductions in support from donors and development partners. In the last five years, there has been an overall decline in investment commitments towards the East African off-grid sector. Whereas this brief does not explain what the cause of this decline is, this trend has been exacerbated by COVID-19 crisis (see Figure 1). This is especially due to the shifts by the region’s governments, donors and development partners financing priorities to the pandemic emergency measures. Some off-grid organisations reported having had their operational plans stalled due to funding withdrawals by the donors. Moreover, the government of Uganda suspended the subsidy program for public electricity access in the country¹². Through concerted efforts with regional governments, multilaterals and other development partners can do more by focusing on setting up schemes to reduce investment risks and attract more foreign direct investment (FDI) in the off-grid sector.

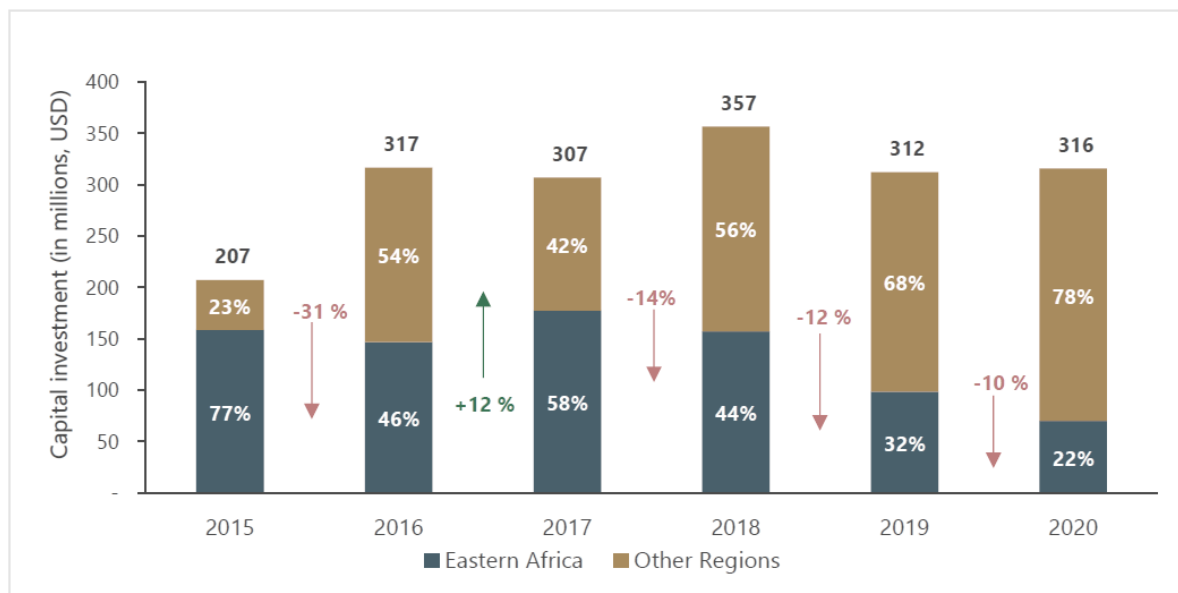


Fig 1: Investment commitments in the off-grid sector for the last 5 years: East Africa vs World¹³.

¹² The Covid-19 crisis is reversing progress on energy access in Africa – Analysis - IEA

¹³ UOMA (2021) The COVID-19 impact on access to finance for local off-grid solar businesses in Uganda.



Ensuring that funding reallocations are replaced with connected funding initiatives. The funding reallocations during the pandemic mainly aimed to empower the health sector, deploy safety measures in public institutions (i.e., availability of water and sanitation services), and provide food to communities. While these sectors required extra assistance during the pandemic, it is the wrong moment to slow down the progress made in the clean energy transition and implicitly the fight against poverty and inequalities. The off-grid renewable sector plays and continues to play a tremendous role in enabling services such as access to affordable and electrified health care and water pumping services in the majority of the African countries. For a speedy recovery, it is prudent that more rejuvenated support from donors and development partners is boosted to propel the off-grid sector to meet the SDG7 and connected goals by 2030.

B. Society-wide

1. Integrate off-grid with society-wide goals by:

Leveraging and encouraging a focus on affordability. Yet again, the issue of affordability came to the forefront as the devastating health, and socio-economic effects of the pandemic ravaged Ugandan communities. It is estimated that the affordability gap in connection to standalone solar in Uganda is USD 330 million¹⁴. Undeniably, most off-grid companies in the East African market recorded declining sales and increments in default rates¹⁵. To counter this challenge, off-grid businesses employed various measures to ensure customers remain connected; from providing bonus days to pay-as-you-go(PAYG) clients who met payment obligations, reducing reconnection fees, waiving call charges, to increasing call centre operation times. Some companies focused on marketing entry-level products, while others introduced new low-cost solar products. Despite the measures employed, affordability is still a conundrum that needs government and development partners' involvement. The role of the off-grid sector is very prominent in the recovery process; hence, interventions that make the issue of affordability more visible in policy strategies across multiple sectors should be critical in policy discussions.

Developing integrated systems that bridge gaps between off-grid and other sectors - for example, education and health. With schools and other learning institutions' closure, some off-grid companies lost potential clients, further piling the pressure on their already constrained financial budgets. Meanwhile, other companies gained from electrifying health centres, which was essential in powering ventilators and other medical appliances during the pandemic. Indeed, most of the interviewed companies indicated that they sought partnerships with other companies in the different sectors, specifically in finance and health.

With the move to work and study remotely, electricity availability and reliability became vital to enable uninterrupted operations. Moreover, the government of Uganda started an initiative where rural households receive solar-powered tablets to improve digital literacy, health

¹⁴ Taking the Pulse Uganda Country Study (seforall.org)

¹⁵ EnDev_Energy_Access_Industry_Barometer_FINAL.pdf



awareness and facilitate home-schooling for children who have spent nearly two years out of school due to the pandemic. Such evidence underscores the integrated nature of electricity and the need to establish policies that break the current siloed nature of policy strategies that constrain companies in the off-grid sector.

2. Connect off-grid with digital infrastructure by:

Accelerating the use of digital tools in the sector through promoting internet access. Several operations in the off-grid sector require physical presence, from staff training to client engagement. Moreover, installers have to traverse the country regions to carry out solar installations and system routine maintenance; the lockdown ban brought all of these to a standstill. Companies resorted to using digital tools to conduct essential activities such as staff training and customer engagement. This shift in the way organisations work highlights the growing need for the internet and digital tools, and it is a sign for policymakers to change the way they think of these sorts of support structures. Governments will need to accelerate digital literacy and internet use in tandem with other economic policy instruments to speed up the recovery process. Policy instruments that impose tax levies on the internet constrain the ability of businesses, including those in the off-grid sector, to adapt. For example, on the 1st of July, the Ugandan government started taxing internet users by a 12% tax on data packages bringing the total to 30% after factoring in the pre-existing 18% VAT¹⁶. Well-intentioned as it may be, in the short and long term, such a policy stifles the ability of businesses to cope with the current economic challenges and threatens the ability of the off-grid sector to contribute to a speedy recovery.

Reducing the costs of mobile money platforms for low-income and rural households. The deep penetration of mobile money platforms across East Africa has made the region the largest off-grid market in Africa¹⁷. As the economic impacts of the pandemic worsened, off-grid companies struggled to reduce their spending. Several measures were employed; from company restructuring to cutting down transaction costs to ease client payments (most of which, especially on PAYG, use cashless payments). East African governments intervened by passing interim support mechanisms for a limited period. The government of Kenya waived charges on cashless payments¹⁸, and Uganda discouraged charges on mobile money transfers across different mobile networks¹⁹ for three months. Though the pandemic motivated these mechanisms, they are favourable for the off-grid sector since the industry serves low-income and rural households who pay instalments as low as \$0.34. Such a move would help lower transaction costs hence boosting client readiness to pay and accelerate the use of cashless payments across the region, thereby promoting financial inclusion.

¹⁶ Uganda replaces OTT social media tax with tax on internet bundles', Quartz Africa

¹⁷ GOGLA (2019) Global Off-Grid Solar Market Report Semi-Annual Sales and Impact Data July - December 2019.

¹⁸ <https://itweb.africa/content/Pero37ZxZNWqQb6m>

¹⁹ Covid-19-pandemic-digital-financial-inclusion-as-public-health-tool-in-africa/



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Ensuring long-standing working frameworks and mobile network standards. With the growth in the application of Internet of things (IoT) in the off-grid sector (e.g., in PAYG solar systems and the integration with mobile money), the need for standards in operation has never been more crucial. In 2020, there was a drop in equity financing in the off-grid sector²⁰, emphasising the need for more investments in the sector to contribute significantly to the economic recovery of East Africa and the entire continent's economies at large. Speaking to off-grid company representatives, they stressed the need for certainty in the industry to attract long term investments. To achieve this, governments will have to ensure working frameworks and mobile network standards align with the minimum investment period. That is to say governments need to be consistent and not impose changes in short time periods. Additionally, due to connections across different systems (PAYG solar systems with mobile money, smart metering and other IoT devices), investments in solar products are attracted by the promise that there is a suitable connection methodology for a minimum period like five years. Hence, consistent mobile money, IoT, and mobile networks regulations are critical.

²⁰ Investment Data | GOGLA