

Powering Jobs Census 2022: Focus on Uganda











Contents

About	3
1. Introduction	4
1.1 Report Objectives	4
1.2 DRE Sector Landscape in Uganda	4
2. Labor Market Features	5
2.1 Employment Estimates	5
2.2 Employment Types	7
2.3 Size of Firms	7
3. Workforce Profile	8
3.1 Women's Participation	8
3.2 Workers' Skill Levels and Training	9
3.3 Levels of Compensation	9
4. Conclusions	11
References	13

The Powering Jobs Census 2022 Series

- » The Energy Access Workforce
- » Focus on Ethiopia
- » Focus on India
- » Focus on Kenya
- » Focus on Nigeria
- » Focus on Uganda

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About

About this report

Coordinated and led by Power for All, the #PoweringJobs campaign and the Powering Jobs Census 2022 are made possible through the generous support and encouragement of The Rockefeller Foundation, Good Energies Foundation, GET.invest, and a coalition of research and implementation partners.

About Power for All

Power for All is a stakeholder coalition campaigning to rapidly scale the deployment of decentralized renewable energy to achieve universal electricity access before 2030. Decentralized renewables, specifically solar appliances and systems designed for households, businesses, and productive use, offer the fastest, most affordable, and cleanest path to electricity access for all. Power for All brings together more than 300 business, finance, research, and civil society organizations to achieve that goal.

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Research Partner

» Uganda National Renewable Energy and Energy Efficiency Alliance (UNREEEA)

Uganda Steering Committee

- » Ministry of Education and Sports, Directorate of Industrial Training
- » Equity Bank
- » Ministry of Energy and Mineral Development, Uganda
- » NTV Uganda
- » Solar Entrepreneur Network for Decentralized Energy Access (SENDEA)
- » SNV
- » Solar Today
- » United Nations Development Programme (UNDP)
- » Xtreme solar solutions

1. Introduction

1.1 Report Objectives

Economies and labor markets around the globe are currently facing many challenges. Existing vulnerabilities, such as high rates of youth unemployment and widespread energy poverty, combined with severe lockdowns in response to the COVID-19 pandemic have worsened livelihoods and deepened socio-economic crises in sub-Saharan Africa and South Asia. Compared to the standard grid extension strategy, decentralized renewable energy (DRE) can provide underserved populations with faster, cleaner, and more affordable energy while generating sustainable jobs that boost local economies. *Powering Jobs Census 2019: The Energy Access Workforce* was the first study of the prevailing employment landscape of the DRE sector and demonstrated the sector's great capacity to contribute to the creation of quality jobs [1].

This study is part of Power for All's Powering Jobs Census 2022 series, which examines the labor market for DRE in Ethiopia, India, Kenya, Nigeria, and Uganda. The DRE industry, which includes pico-solar appliances, solar home systems (SHS), commercial and industrial (C&I) standalone systems, and mini-grids, has an important role to play in the current global context. The technologies that comprise the DRE sector are essential to achieving Sustainable Development Goal 7 (universal energy access), but the sector also contributes to achieving Sustainable Development Goal 8 through job creation.

Powering Jobs Census 2022: The Energy Access Workforce is a bottom-up count of employment in the DRE sector [2]. Through direct surveys of over 350 DRE companies, the study consolidates employment data for the period spanning 2019 to 2021 and also includes employment and sales projections for 2022 and 2023. Primary data from the surveys, along with existing literature on the DRE sector, was used to estimate total DRE employment at a national level. The data collection and analysis were complemented by five focus group discussions (FGDs), one in each focus country, that helped validate the main results of the census and obtain additional qualitative information and context. For details regarding methods, sample characteristics, definitions, and scope of analysis refer to the global report [2].

This report breaks down the research results for Uganda, focusing on the country's DRE employment landscape, labor market features, and workforce profile. The latter includes the participation rate of women, skill levels and training in the sector, and compensation. The findings of this study can be used to raise awareness of the DRE sector's potential for job creation and to spark conversation about how to train the workforce for energy access. As Uganda's DRE market grows and develops, so do the possibilities for employment generation within the sector.

1.2 DRE Sector Landscape in Uganda

Current Status of Electrification

Although Uganda has made remarkable progress in recent years, with power sector reforms and other incentives to speed the rate of connections, the national electrification rate remains low. According to official sources, in 2021 only 57% of households in Uganda had access to energy—two-thirds of which are off-grid connections—and only 25% of the population had access to electricity for more than four hours per day (Tier 1+ access, as defined by the World Bank) [3], [4]. In addition, a substantial gap still exists between urban and rural areas. While 70% of Ugandans in urban areas have access to electricity, only one-third of the population in rural areas does [5].

The Government of Uganda considers electrification a national priority and placed it at the core of the Third National Development Plan, which targets 60% access by 2025. The plan has been complemented by other efforts, such as the Electricity Connections Policy and the Rural Electrification Programme. The latter has contributed to increasing access for one million new customers (since 2013) by massively extending the distribution power lines. Together, these programs support the realization of Uganda's Vision 2040, which aims to increase national electrification access to 80% of the population. However, as the population has been growing faster than electrification rates since 2018, the 2040 target seems impossible to achieve through the usual grid electrification approach. Given the cost-effectiveness and viability as a solution for last-mile electrification, DRE technologies will be instrumental to the government's ambitions of providing clean energy [6].

Current State of the DRE Sector

Off-grid connections, mostly mini-grids and SHS, have gained traction in recent years due to expensive grid connection fees and high wiring costs, especially in rural villages where consumer demand is the lowest and capital expenditures required for grid extension are the highest, mostly due to low population density and large distances [7], [8]. To achieve its electrification goals, the Government of Uganda has particularly emphasized the use of distributed solar solutions as a paramount strategy for scaling up electricity access and has introduced different measures to promote the deployment and adoption of DRE technologies, including tax breaks and consumer subsidies. Currently, more than 200 DRE companies are active in the Ugandan photovoltaic and solar thermal markets [3].

The Utilities 2.0 initiative—also known as the Twaake pilot—is currently testing an integrated energy model to demonstrate that both centralized and decentralized energy technologies are instrumental to achieving universal energy access in Uganda. Funded by the Rockefeller Foundation and coordinated by Power for All, the project brings together the centralized power utility company, Umeme Ltd., and several Uganda-based DRE companies [9]. Its integrated energy approach aims to deploy faster connections, increase productive use of electricity, improve grid reliability and stability, reduce grid losses, promote economic growth in rural communities, and improve overall business profitability. The first "integrated energy" mini-grid was officially commissioned on June 28, 2021 [10].

Policy Landscape

The Ministry of Energy and Mineral Development seeks to incentivize private investment for mini-grids in the country, an objective that requires some refinement in the policy and regulatory framework to enable the deployment of mini-grid projects at the necessary scale [8]. The Renewable Energy Policy currently serves as the framework for renewable energy projects throughout the country and seeks to increase the share of renewables in the energy mix.

In partnership with international donors, Uganda's Rural Electrification Agency (REA) developed the Electricity Connections Policy in 2018 [7]. The policy subsidizes electricity connection fees and reduces inspection fees while raising awareness among the population about the policy and its benefits. In addition, Uganda's Rural Electricity Access Project aims to provide reliable and affordable electricity to rural households, public agencies, and small and medium enterprises [4]. On the other hand, the Global Energy Transfer Feed-in Tariff (GET FiT) Program seeks to accelerate several smallscale DRE projects (between 1–20 MW) by private developers to reach a total installed capacity of 125 MW [11]. Besides improving the reliability of regional grids, this program is expected to facilitate—or significantly improve—electricity access for more than 900,000 people, particularly in rural areas. Additionally, it could result in emissions reductions equivalent to 11 million tons of CO2.

Future Prospects for the Sector

Ending energy poverty in Uganda will require concerted efforts from government agencies and the private sector, particularly regarding the deployment of DRE projects. The DRE sector will also need sound policies and adequate regulations to scale up the rollout of micro- and mini-grids. International agencies and the private sector can influence new and existing policies by underscoring the benefits of DRE technologies and their critical role in achieving universal electricity access [12]. Scaling up off-grid projects will also require adequate funding and financing. In particular, the DRE market will require increased lending in local currency. Other measures, such as the standardization of pay-as-you-go (or PayGo) performance indicators, can help de-risk the DRE market for commercial banks to expand debt financing [13].

To achieve universal electrification, Uganda will need more than conventional approaches to energy access; attempting it solely through the extension of the main grid would require about a fifth of the country's annual GDP. On the other hand, an integrated energy model can contribute to achieving Uganda's targets faster, sustainably, and cost-effectively. Connection costs can be reduced by 50% through integrated energy approaches that combine the advantages of traditional utilities (existing infrastructure, transmission lines, low-cost financing) and DRE technologies (lower cost connections, faster implementation). These types of partnerships, once scaled, would allow Uganda to achieve affordable, sustainable, and modern energy for all [10].

2. Labor Market Features

2.1 Employment Estimates

The Ugandan DRE sector employed close to 30,000 workers in 2021, indicating a 15% contraction of the workforce relative to 2019. Prior to the COVID-19 pandemic, DRE companies had created employment opportunities for 35,000 Ugandans. Unless the market conditions change (e.g. the sales of off-grid solar appliances change course and grow considerably) over the next few years, the employment creation of the Ugandan DRE sector is expected to remain stagnant with no additional job creation in the sector until 2025. Figure 1 below describes the estimated job creation in the Ugandan DRE sector between 2019 and 2023.

The decrease in SHS sales volume was the main reason for the loss of direct employment in the DRE sector. Uganda recorded sales of 263,500 SHS products in 2021, which reflected an annual decline of 18% from the almost 400,000 products sold in 2019 [14]. The economic downturn brought about by the pandemic, coupled with stringent government lockdowns, were mostly responsible for this drastic contraction of the SHS market. In the second half of 2020, sales of SHS showed signs of recovery after the easing of the restrictions implemented during the first lockdown, but a second wave



FIGURE 1. TOTAL DRE SECTOR DIRECT EMPLOYMENT IN

UGANDA

Source: Data from Power for All (2022); market size estimates from GOGLA (2022) and IRENA (2021)

of restrictions was introduced in the first half of 2021 that further depressed volumes sold [15].

Participants in the FGD indicated that most DRE companies were financially stressed due to the pandemic, forcing them to reduce their employee base [16]. In other cases, some of the companies had to shift their full-time employees to part-time. However, the DRE sector's loss of direct employment is not an isolated case. Employment rates generally declined in Uganda due to the economic downturn caused by the pandemic. According to a survey by the Uganda Bureau of Statistics and the World Bank, employment rates dropped by almost 12% towards the end of 2021 compared to the pre-pandemic level of employment in 2019 [17].

Even before the pandemic, the Ugandan SHS segment was showing signs of stagnation. According to a market report from GOGLA, between 2016 and 2019 the total volume sold only increased by 1% annually [18], while Uganda's population growth rate was 3% annually [5]. Experts interviewed mentioned that many companies were already struggling financially, and many international ones had started to divest away from SHS as growth projections were grim.

FIGURE 2. SHARE OF DRE WORKERS BY TYPE OF TECHNOLOGY AND LEVEL OF FORMALITY IN 2021



Source: Data from Power for All (2022); market size estimates from GOGLA (2022) and IRENA (2021)

For example, M-KOPA changed its business model and is now engaged in selling mobile phones [19]. In this context, the pandemic just aggravated the existing challenges.

2.2 Employment Types

The SHS sub-sector employs the greatest number of workers in the DRE sector in Uganda, accounting for 99% of the sector's employment. Cumulatively, mini-grids and C&I systems account for less than 1% of the total direct employment in the DRE sector. Figure 2 portrays the composition of Uganda's DRE sector direct employment across different types of technologies and levels of formality in the sector.

As DRE technology is still relatively new to Uganda, the domination of SHS in direct employment is not surprising. Most of the off-grid locations in Uganda receive electrification through SHS solutions while the C&I and mini-grid segments are still nascent. In addition, unlike the C&I and mini-grid segments, the SHS segment creates more direct employment and less indirect/ induced employment.

Relative to the size of the market, the Ugandan SHS market creates more employment opportunities than the SHS market in neighboring Kenya. In other terms, Uganda's SHS segment is more labor intensive than Kenya's, employing more than 100 people per 1000 products sold compared to Kenya's SHS segment, which employs a quarter of that for the same amount of products sold. Participants in the FGD indicated that labor is cheaper in Uganda than in neighboring countries and hence DRE companies end up hiring more workers compared to their Kenyan counterparts. This could, in part, reflect a lower labor productivity. The second factor for Uganda's high labor intensity is limited adoption of technology. Compared to their Kenyan peers, Ugandan DRE companies are slowly adopting the use of technology, such as PayGo, which replaces the need to hire employees. However, a reversal of the adoption of PayGO was observed during COVID-19. Ugandan DRE companies reverted to prioritizing cash sales to ensure sufficient cash flow, whereby cash sales increased by 83% in the second half of 2020 compared to the first half [15].

As discussed in section 2.1, the market size for SHS products in Uganda is showing little growth. This might indicate the beginning of a shift toward larger DRE systems such as C&I and mini-grid. FGD participants indicated that they recognize this transition and are moving to PUE models through which they will expect more sales over the next two years [15]. FGD participants indicated that they anticipate the C&I segment to grow by 10% annually. Currently, however, mini-grids and C&I systems account for less than 1% of the direct employment in Uganda. The installed capacity for C&I and mini-grids is very small compared to the need, as well as to the capacity of neighboring countries. Uganda has less than 1 MW of installed C&I capacity, whereas Kenya's is estimated at more than 30 MW [20]. The limited capacity results in fewer jobs in this segment. On the other hand, Uganda has commissioned 19 minigrids with more than 60 planned [15]. However, mini-grids generally create very few direct employment opportunities and usually these are only during the installation phase. Most of the employment comes in terms of indirect and induced jobs. A report by the Africa Minigrid Developers Association (AMDA) estimates that minigrid developers created 621 local village jobs and 402 central staff jobs from 2010 to 2019 in 288 sites across western, central, eastern, and southern Africa [21].

The Powering Jobs Census 2022 also looked at the level of formality in the DRE sector labor workforce. Informal employment accounts for 20% of the total direct employment, and most employment is in direct full-time employment. Uganda has a very high share of informality in its labor market, with informal employment comprising close to 90% of total employment in 2017 [22]. Total employment in the informal sector, especially in urban areas, is believed to have declined due to the closure of smaller firms as a result of the impact of COVID-19 [23]. Still, the actual level of informality in the DRE sector in Uganda is believed to be higher than what is reported in the Powering Jobs Census 2022(20%). Small DRE firms, which are the source of the majority of informal employment, may have been under-represented in the census due to challenges in contacting them, and this may have resulted in an underestimation of informal employment in the DRE sector.

2.3 Size of Firms

The Ugandan DRE sector is composed of a diverse set of companies. In *Powering Jobs Census 2022: The Energy Access Workforce*, Ugandan DRE companies are classified into three groups based on the number of their employees. The first category is large DRE companies, defined as those companies employing more than 100 full-time workers. The second category is medium-sized companies, which employ more than 25 but less than 100 workers. The last category is small companies, which employ less than 25 workers. Figure 3 illustrates the distribution of DRE employment by the size of companies.

Employment in the Ugandan DRE sector is almost equally distributed between the different sizes of companies, yet some increased



FIGURE 3. SHARE OF EMPLOYMENT BY SIZE OF FIRMS

Source: Power for All (2022)

consolidation is expected in the near future. The first indicator is that most smaller, local DRE companies were adversely affected by COVID-19 resulting in a decline in sales and forcing some to close [24]. Participants in the FGD indicated that large local companies demonstrated greater resiliency during the pandemic by redeploying their workers to products and locations where there was strong demand. On the other hand, international companies were forced to close their rural outlets due to a lack of demand during the pandemic.

The second indicator is local financiers are more inclined to support large DRE companies, limiting the pool of funding that smaller DRE companies can receive. In 2020, DRE and improved cookstove companies received more than US\$52 million, but capital raises are dominated by large multinationals [25]. As the market matures and shifts towards larger energy systems, such as C&I and mini-grids, this trend of consolidation is expected to accelerate.

3. Workforce Profile

3.1 Women's Participation

The participation rate of women in the DRE sector currently stands at 28%, significantly lower than that in the overall economy in Uganda, which stands at 49% [5]. However, DRE companies in the FGD have shown interest in increasing women's participation in the labor force. Based on the interests and intentions of policymakers and companies, they expect the share to increase to 40% by 2023. Across all DRE technology segments in Uganda and across skill levels, women's participation is below 35%. In the SHS segment, which accounts for 99% of employment in the Ugandan DRE sector, the current share of jobs held by women stands at 28%. The highest share of DRE jobs held by women is observed in unskilled work in the mini-grid segment, while women account for almost 30% of the semi-skilled labor force in the C&I segment. Figure 4 represents the current participation rates of women in Uganda's DRE sector across technologies and skill levels.

The energy sector in Uganda, as is the case in many countries, is a male-dominated industry. Women account for only approximately 30% of the staff of the Ugandan Ministry of Energy, for instance, and they mostly work in administrative and structural roles with minimal representation in decision-making (i.e. leadership) and technical roles. One outlier to this situation is the REA, where women comprise close to 50% of the workforce [26].

Generally, Ugandan women face multifaceted challenges that hinder them from joining the DRE sector. Participants in the FGD indicated cultural barriers, such as workplace discrimination and household responsibilities, play a significant role in discouraging women from entering the sector. Women appear to be more inclined to pursue roles in biomass (clean cooking) than roles in technologies such as solar. Furthermore, there is a perception within DRE companies that women lack technical skills, such as installation and engineering, which limits women's chances to be hired for



FIGURE 4. SHARE OF WOMEN WORKERS ACROSS DIFFERENT SKILL LEVELS AND DRE TECHNOLOGY

Source: Power for All (2022)

those positions. Women primarily hold front desk and finance jobs and rarely hold positions in technical roles such as installation.

Uganda has a strong policy and legal framework to mainstream gender parity in the energy sector, including improving access to energy in a way that meets the specific needs of women and involving women in the sector's decision-making [26]. However, it is unclear if the policies are adequately implemented. Initiatives, led by women, to improve their participation in the sector include the formation of the Women in Renewable Energy Association Uganda, which aims to increase awareness and involvement of women in the renewable energy sector [27].

3.2 Worker's Skill Levels and Training

In Uganda, a worker from the DRE sector receives, on average, 51 hours of internal training and 47 hours of external training. Internal training is defined as training offered by the DRE company itself, and external training is any form of a skill-development program provided by the government, a non-profit, or other actors in the private sector. Surprisingly, and unlike the case in other countries, the amount of external training reported decreases with an increase in the level of skill (i.e. unskilled workers receive the most hours of external training). As for internal training, the average number of hours as a function of skill level presents mixed results. The average number of hours is higher for top management and semi-skilled jobs (55 and 57, respectively) and lower for skilled and unskilled jobs (47 and 45, respectively).

FIGURE 5. AVERAGE HOURS OF TRAINING FOR COMPANIES SURVEYED



Source: Power for All (2022)

Nearly 75% of DRE companies who took part in the Powering Jobs Census 2022 said they offered some kind of training to their staff members, whether internal or external. The majority of such companies provide internal training programs for top management and skilled jobs. The scenario for external training is quite comparable: 59% and 64% of the businesses offer external training to senior management and skilled employees, respectively. However, just 29% and 20% of employers offer external training for semi-skilled and unskilled workers, respectively.

The Powering Jobs Census 2022 study identified 12 key areas in which further training is required by Ugandan DRE firms. A few areas reflect soft skills, such as communication, interpersonal skills, and time management, but the majority of them are hard skills, including installation and commission, marketing, maintenance, and project management. The results indicate that DRE companies prioritize marketing and finance skills in regard to training their employees. Installation and maintenance skills, necessary to support growth in mini-grids and C&I, were highlighted by DRE companies as the 3rd and 4th most important focal areas for training.

Although training is needed to push the growth of the DRE sector in Uganda, additional challenges remain. A lack of incentives to recruit skilled workers and a lack of well-paying employment opportunities were both highlighted in the FGD. Additionally, FGD participants stated that accessing grant funding for renewable energy businesses has been challenging recently, due to a focus on funding COVID-19 relief.

3.3 Levels of Compensation

Based on the Powering Jobs Census 2022, conducted by Power for All, the average annual wage for the DRE sector in Uganda ranges from US\$1,200 for a top management position to close to US\$170 for an unskilled worker. According to an estimate by the Uganda Bureau of Statistics, average rural wages in Uganda were almost US\$433 in 2020, which is slightly lower than the average for semiskilled workers' annual wages in the DRE sector [28]. The average annual urban wage in Uganda is close to US\$1,000, which is slightly higher than the average earnings of a skilled worker in the DRE sector (US\$707) but lower than that of top management workers in the DRE sector (US\$1,199) [29].

As shown in figure 7, there are large disparities in wages within the DRE sector in Uganda according to the type of technology of the company. Companies in the SHS segment pay better wages, on average, followed by C&I and then mini-grids firms. As expected, the



FIGURE 6. TYPE OF SKILLS DRE COMPANIES IDENTIFIED AS VERY IMPORTANT FOR THEIR STAFF

Source: Power for All (2022)

level of compensation increases hand-in-hand with an increase in skill level. The difference in average wage is more pronounced in the SHS segment, in which skilled workers receive almost twice as much compared to their semi-skilled peers.

The DRE sector in Uganda is close to achieving pay parity between men and women employed in the sector. According to the results from the Powering Jobs Census 2022, women in the DRE sector earn 96% of what their male counterparts earn. The highest pay gap exists for semi-skilled workers at 95%, while women in top management roles in Uganda have the lowest pay gap at 98%. The gender pay gap in the DRE sector is lower than the national average and also lower than in the other focus countries of the Powering Jobs Census 2022. However, the sector is still plagued by the same socio-economic and structural problems that can drive women away from the sector.

FIGURE 7. AVERAGE ANNUAL WAGE FOR DIFFERENT ROLES IN THE DRE SECTOR IN 2021 (IN US\$)



Source: Power for All (2022)

4. Conclusions

The Ugandan DRE sector employed close to 30,000 workers in 2021. Between 2019 and 2021, the sector exhibited a 15% contraction in the workforce. If the current market situation prevails, employment creation within the Ugandan DRE sector is expected to remain static with no additional job creation in the sector until 2025. The economic downturn brought about by the pandemic, coupled with stringent government lockdowns, resulted in a drastic contraction of the SHS market. The sales volume of SHS products declined by 18% annually, which directly contributed to a loss in jobs in the DRE sector [14].

The SHS sub-sector accounts for 99% of the sector's employment. Despite the decrease in sales volume, the SHS segment employs the most workers within the DRE sector. Uganda's SHS segment is labor intensive, hence creating more employment opportunities relative to the size of the market. Uganda's cheap labor cost is a contributing factor to the high labor intensity of the SHS sector.

Informal employment accounts for 20% of the total direct employment in the Ugandan DRE sector. Uganda is largely an informal economy with informal employment accounting for 90% of total employment in 2017 [22]. The level of informal employment in the Ugandan DRE sector may, in fact, be higher than 20%. Under-representation of smaller DRE firms, the source of the majority of informal employment, is likely due to challenges in locating formal addresses and reaching these firms. The participation rate of women in the DRE sector in Uganda currently stands at 28%. The DRE sector has a significantly lower rate of women's participation than the overall economy of Uganda, which stands at 49% [5]. Women tend to be over-represented in front desk and finance jobs and rarely in technical work such as installation.

In Uganda, a worker from the DRE sector receives, on average, **51** hours of internal training and **47** hours of external training. Nearly 75% of DRE companies who took part in the Powering Jobs Census 2022 said they offered some kind of training to their staff members, whether internal or external. DRE companies indicated a prioritization of marketing and finance skills as training focal points for their employees. Installation and maintenance skills were also highlighted as areas in which skills development is needed, especially considering the transition of the sector into C&I and minigrids.

The average annual wage for the DRE sector in Uganda ranges from US\$1,200 for a top management position to close to US\$170 for an unskilled worker. There are large disparities in wages according to the type of technology of the company. Firms in the SHS segment, on average, pay better wages than other segments. Their rates are followed by C&I and then mini-grids. Uganda has almost gender pay parity in the DRE sector as women receive 96% of what their male counterparts earn.

Box 1: Ugandan workers in the DRE sector are witness to how energy access helped improve their communities' health outcomes

The Powering Jobs Census 2022 research team spoke with employees of We Care Solar to understand what they like about their work. We Care Solar is a non-profit that provides health workers with solar-powered lighting, mobile communication, and medical devices to low and middle-income countries to promote safe motherhood and reduce maternal mortality.



"I love my job because everyone shares the same vision and is dedicated to the mission and also our work contributes to a larger purpose of improving the quality of care for women and their babies which is the biggest motivation for me. My experience working during COVID-19 lockdown on the other hand brought positive impact as far as working with multiple stakeholders is concerned. Everyone was adaptive to the new normal of holding virtual meetings and virtual coordination of program activities which made my work much easier."

Phionah Abaho Bruce Uganda Programs Coordinator, We Care Solar



"The fact that I don't only see but also feel the impact of our work. Being a mother and working every day to ensure other mothers get to see and experience their first moments with their babies is what sets this job apart from just going to work every day. Though I wasn't in the thick of things like our installers, being able to continue supporting the mothers during COVID only goes to show how our work is borderless."

Feza Kabasweka Greene Africa Programs Deputy Director, We Care Solar

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