



Powering Jobs Census 2022: Focus on Nigeria

POWER FOR ALL



Good Energies
BY PORTICUS



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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

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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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1. Introduction

1.1 Report Objectives

Labor markets around the globe are currently facing many challenges. Existing vulnerabilities, such as high youth unemployment and widespread energy poverty, combined with severe pandemic lockdowns have worsened livelihoods and deepened socioeconomic 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], [2].

This study is part of Power for All's Powering Jobs Census 2022 series, which examines the labor market for the DRE industry 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 universal energy access (Sustainable Development Goal 7), 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 [3]. 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 [3].

This report breaks down the research results for Nigeria, focusing on the country's DRE employment landscape, labor market features, and workforce profile. The latter includes the participation 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 Nigeria's DRE market grows and develops, so do the possibilities for employment generation within the sector.

1.2 DRE Sector Landscape in Nigeria

Current Status of Electrification

More than 90 million Nigerians lack access to electricity [4]. This figure represents 55% of the total population, placing Nigeria in the top three countries with the largest energy deficits in the world (along with Ethiopia and the Democratic Republic of Congo) [5]. Energy infrastructure is unequally distributed throughout the country, following the typical urban-rural divide. While most power plants, transmission lines, and distribution lines are located around urban centers like Lagos, other parts of the country are isolated from the grid [6]. As a result, 84% of Nigerians in urban locations have access to electricity, while less than 25% of Nigerians in rural areas do [4].

Although the grid might reach a particular town, not all the town's inhabitants may have access to it. Because of poor grid maintenance, the share of the population served by the grid is lower than the share connected to it, meaning that many households are living "under the grid." About 43 million people in Nigeria receive electricity from the central grid, but this is less than a quarter of the total population [6]. For most people who do have a connection to the grid, the service is deficient and unreliable. According to the World Bank, Nigeria ranks first in the continent in electrical outages per month and average outage duration [4]. Despite being the largest economy in sub-Saharan Africa and devoting significant resources to energy, Nigeria continues to struggle with insufficient and unreliable power, which significantly constrains the country's economic growth and development [7]. For instance, more than 70% of Nigerian businesses must compensate for the unreliability of the central grid with private generators [6]. According to the World Bank, the lack of reliable power results in an estimated annual economic loss of US\$26 billion, equivalent to around 2% of the country's GDP [8].

Current State of the DRE Sector

The Government of Nigeria has prioritized access to clean and sustainable energy for millions of Nigerians through a combination of centralized and decentralized technologies. The government aims to encourage the private development of mini-grids in rural and remote communities [9]. As a result, off-grid energy solutions, such as mini-grids and SHS, have been experiencing market growth in recent years. According to the Nigerian Rural Electrification Agency (REA), these technologies represent a potential market opportunity

of US\$9.2 billion every year. However, notable challenges, including lack of financing, are still a binding constraint for the rollout of decentralized energy solutions [10].

Mini-grids offer a competitive alternative to the main grid and diesel-powered self-generation. The mini-grid industry is still nascent in the country but has seen significant growth in recent years. In 2017, the Nigerian Electricity Regulatory Commission (NERC) adopted the *Regulations for Mini-Grids*. Also in the same year, the Rural Electrification Fund (REF) was launched to develop on-grid and off-grid electrification in rural areas through financial and technical support [6]. As a result of these changes in the ecosystem, several mini-grid companies operate in the country today. The largest developer independently owns and operates 15 mini-grids throughout the country [10]. Most mini-grids serve households and small businesses using one of three main business models: prepaid meters coupled with scratch cards, pay-as-you-go (PayGo) systems, or cross-subsidy schemes [6].

Policy Landscape

The REA coordinates and implements rural electrification programs throughout the country [11]. In addition, it manages the REF to promote, support, and provide rural electrification by engaging public and private actors. One of the programs managed by the REA is the Nigeria Electrification Project (NEP) which is a nationwide initiative driven by the private sector [12]. The goal is to provide affordable electricity to households, small and medium enterprises (SMEs), healthcare facilities, and public institutions through DRE solutions, including SHS, mini-grids, and productive-use appliances [13]. The NEP has four main pillars: the installation of 24,500 productive-use solar photovoltaic appliances; the deployment of mini-grids in 250 sites; the installation of eight mini-grids in federal universities; and the strengthening of REA's institutional capacity [13]. It is expected that by the end of the project, more than 700,000 households and 3.5 million people will gain access to electricity [12].

To facilitate the transformation of the power sector in Nigeria, the federal government created the aforementioned NERC as an independent regulatory agency. The NERC aims to promote and ensure adequate market structures, fair and competitive electricity trading, and an enabling business environment. It also regulates and monitors the power sector—including the mini-grid industry—to ensure private companies comply with rules, regulations, and operating guidelines [6]. For this purpose, the NERC has recently established a comprehensive framework for mini-grids to increase their deployment and operation [6].

Future Prospects for the Sector

The Government of Nigeria has set a target of increasing electricity access to reach 75% of the population by 2020 and 90% by 2030 [14]. While the government did not meet the first target (the electrification rate was only 55% in 2020), Nigeria plans to achieve universal access by 2040. To accomplish this, the government must connect half a million households through conventional and renewable sources—both on-grid and off-grid—each year through 2040 [15]. Nigeria is already developing and implementing ambitious programs to facilitate electricity access. For instance, Nigeria's Off-Grid Electrification Strategy aims to provide electricity access through 10,000 mini-grids to 14% of the population by 2023 [9]. As part of the Off-Grid Electrification Strategy, the Solar Power Naija (SPN) initiative aims to expand electricity access by 2023 to an additional 25 million individuals through 5 million new, solar off-grid connections [10]. In addition, the SPN is expected to create 250,000 new jobs in the energy sector [16].

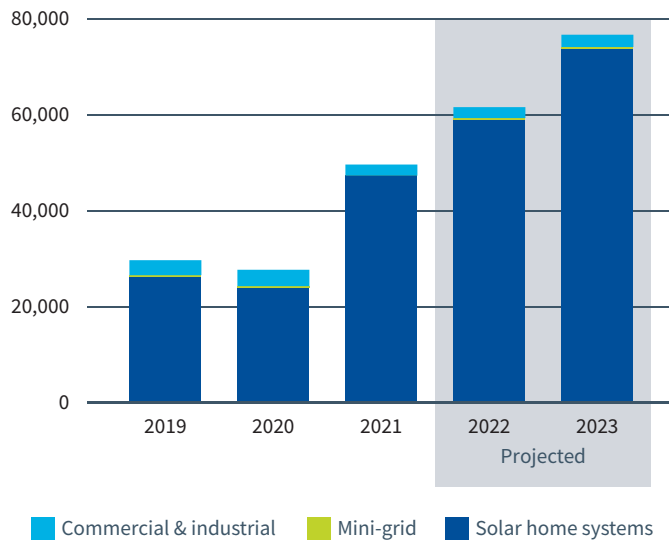
2. Labor Market Features

2.1 Employment Estimates

The Nigerian DRE sector employed nearly 50,000 people in 2021. The sector registered a slight decline of nearly 2,000 jobs in 2020 but bounced back fast, recording almost double the total employment in 2021. Among the focus countries studied in this report, Nigeria exhibits the fastest recovery from the pandemic and is the only country to register higher employment numbers in 2021 than pre-pandemic [3]. Bolstered by strong demand for DRE products, the DRE sector in Nigeria is expected to continue its momentum with job growth projected to be almost 25% per annum between 2021 and 2023. By the end of 2022, the Nigerian DRE sector employment is expected to surpass Kenya's (sub-Saharan Africa's largest DRE market), and in 2023 total jobs are expected to reach nearly 75,000. Furthermore, the number of direct DRE jobs is fast approaching that of the oil and gas sector, which currently accounts for an estimated 65,000 jobs in Nigeria [17]. Figure 1 illustrates trends in employment in the DRE sector between 2019 and 2023.

Unlike the other focus countries in the Powering Jobs Census 2022, Nigeria registered growth in the DRE market size in 2020 (at the height of the pandemic). While the total sales volume of SHS products increased only slightly by 1%, the total installed capacity for mini-grids and C&I systems increased by 10% each [18], [19], [20]. However, despite this modest increase in the market size for DRE products, direct DRE jobs declined by 7% in 2020 compared to 2019.

FIGURE 1. TOTAL DRE SECTOR DIRECT EMPLOYMENT IN NIGERIA



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

Based on census respondents' feedback, the modest decline in jobs was a result of DRE firms hiring fewer workers due to uncertainty regarding potential lockdowns or other measures.

The resilience of the Nigerian DRE market is an interesting case. During 2020, COVID-19 ushered in Nigeria's deepest recession, stemming mainly from lockdown measures that restricted people's movement but also from a slump in the demand for oil globally (which accounts for almost 10% of Nigeria's GDP) [21]. According to a World Bank survey conducted in 2020, Nigeria's national employment level fell by nearly 50% during the first half of 2020, but it recovered to pre-pandemic levels during the second half of 2020 [22]. Despite the economic challenges caused by the COVID-19 pandemic, the DRE sector, especially the SHS sector, was able to maintain its pre-pandemic level of sales.

The outlook for DRE sector employment in Nigeria is positive. Nigeria has the potential to become the biggest off-grid market in Africa. As of 2020, 45% of Nigeria's population (over 90 million people) lacked access to electricity [4]. Having both the largest population on the continent and the biggest economy in Sub-Saharan Africa (GDP approaching US\$500 billion), Nigeria is one of the best locations in the world for mini-grid and SHS development [23]. According to an estimate by the REA, developing off-grid alternatives

to complement the central grid creates a market opportunity of US\$9.2 billion per year [23], [24]. This will have a direct impact on the job creation potential of the Nigerian DRE sector.

Powering Jobs Census 2022: The Energy Access Workforce projects that the growth of DRE jobs in Nigeria will continue and that by 2023, the sector will employ more than 76,000 workers. Most of the jobs are expected to come from an increase in the sales of SHS products. Hence, many new positions are expected to be in sales and distribution. Studies indicate there is significant latent demand for SHS products, especially for solar lanterns and multi-light systems among peri-urban and rural customers [25]. Unlocking this demand will enable the DRE sector to become a major engine of job growth, particularly in locations without access to grid electricity.

2.2 Employment Types

The pico-solar and SHS segment accounted for 95% of total direct employment in the Nigerian DRE sector in 2021. The remaining 5% of jobs were in the C&I and mini-grid segments, though the latter represents only about 1% of jobs. Most of the employees in the DRE sector are either direct full-time workers or informal workers. Both categories individually account for more than 30% of the direct employment in the Nigeria DRE sector. Figure 2 describes the composition of the DRE workforce by type of technology and level of formality in the DRE sector.

Nigeria has been recording high-volume sales of SHS products for the past few years. Between 2016 and 2021, SHS sales registered an annual growth of 18% [18]. Most of the SHS products sold are solar lanterns, but multi-light systems and larger SHS have also seen growth, especially since the introduction of PayGo [18]. While in other DRE markets, like Kenya, the pico-solar and SHS segment is more saturated—with sales starting to transition to larger SHS systems and expected to later shift to mini-grid and C&I technologies—there is still untapped demand for the SHS segment in Nigeria, particularly in rural and peri-urban areas. The REA aims to deploy 5 million solar standalone systems in Nigeria by 2023 [26]. The deployment of these systems is expected to create jobs for solar installers and sales agents for an extended period of time. For example, Azuri, a private DRE company with operations in Nigeria, expects to create 500 direct jobs and 5,000 indirect jobs via the deployment of 20,000 PayGo SHSs [26].

Even though most of the jobs in the coming few years are expected to come from the SHS segment, the C&I and mini-grid segments are also expected to create a fair share of employment. There is high

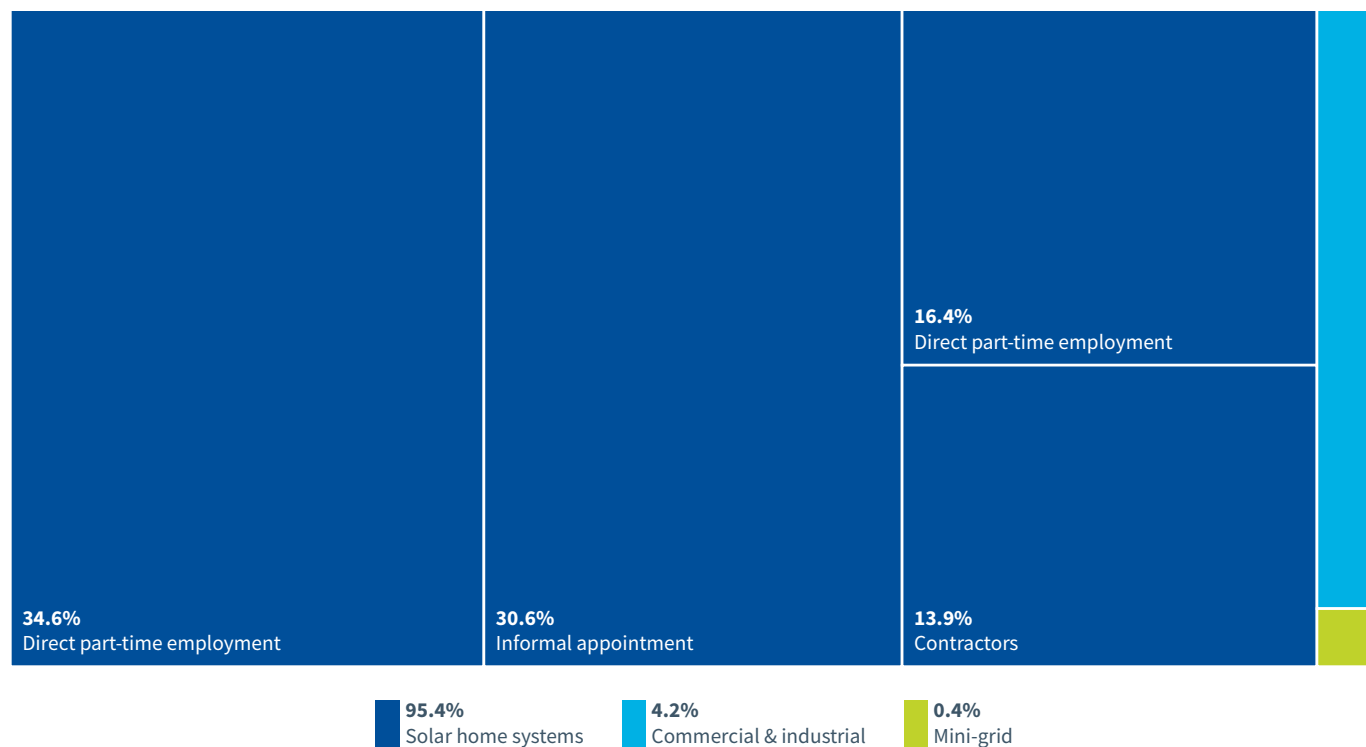
potential for C&I technologies not only in locations without grid access but also in major cities that face frequent power blackouts. Nigerian businesses spend almost US\$14 billion annually on the inefficient generation of electricity using diesel generators [23]. Companies in the DRE sector are offering various products, ranging from solar-powered cold chains and solar refrigerators to solar storage hybrid power systems, to address this need [26], [27]. The expansion of these technologies is expected to contribute to job growth in the C&I sector.

Similarly, substantial mini-grid deployment is expected over the coming years, also potentially increasing employment in the sector. The Nigerian Government plans to deploy 10,000 mini-grids by 2023 to power up to 14% of the Nigerian population. Similarly, the German Development Agency (GIZ) estimates that over 25 million Nigerians can be most effectively provided with electricity via nearly 8,000 isolated mini-grid systems [26]. According to input received for the Powering Jobs Census 2022, 200 jobs existed in the mini-grid sector in 2021, but this is expected to grow to 230 by 2023. The census uses past trends on installed capacity of mini-grids to project future jobs. Hence, this job creation estimate is conservative as it

doesn't account for government plans for future mini-grid deployment. Also worth noting, relative to the other DRE subsectors, the mini-grid sector creates more indirect and induced employment, which is not measured in this census, than direct employment.

The responses to the Powering Jobs 2022 census show that the DRE sector has a substantially lower proportion of informal jobs than the national average. The ILO estimated in 2018 that 93% of all employment in Nigeria was informal, yet informal employment accounted for only 31% of all total direct employment in the Nigerian DRE sector. The difference between these two rates could be due to an under-reporting of informal employees, which is not uncommon in these types of surveys. However, there are signs of increased formalization in the DRE sector. According to *Powering Jobs Census 2019: The Energy Access Workforce*, informal employees comprised an estimated 70% of direct employment in the DRE sector in 2018 [2]. As the COVID-19 pandemic posed only a minor disruption to DRE sector employment, the likelihood that a significant share of informal employees may have been converted to formal workers seems high. The Nigerian DRE sector landscape also demonstrates growth in independent contractors. FGD participants shared that

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)

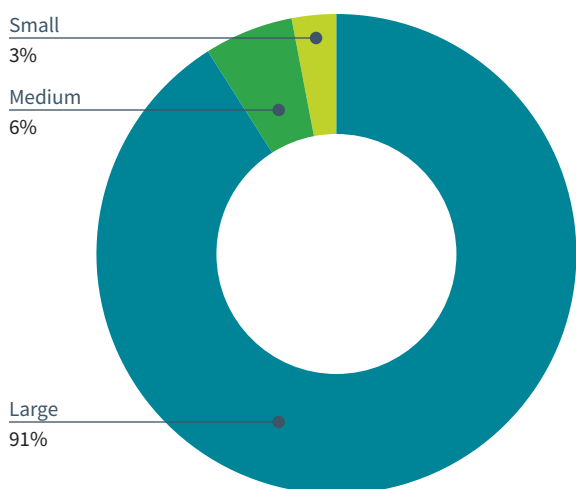
they converted some full-time employee positions, mostly seasonal roles such as installation technicians, into independent contractor positions. This change in employment type gave the firms more flexibility during uncertain times at the height of the pandemic.

2.3 Size of Firms

The Nigerian DRE sector is composed of a variety of companies with different scales and product offerings. The Powering Jobs Census 2022 classifies DRE companies into three categories- based on their headcount. The first category is large DRE companies, defined as those companies employing more than 100 full-time employees. 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 DRE firms.

Large DRE companies dominate the employment landscape in Nigeria, accounting for 91% of the total workforce. A report by Power Africa indicates that the SHS market is dominated by 25 foreign and local companies, some of whom manufacture their own products or assemble them outside of Nigeria [10]. Participants in the FGD indicated that while large SHS and pico-solar companies employ the bulk of the workforce in the DRE sector, the share of employees within SMEs may be under-represented. Some smaller companies may not have been included in the survey due to difficulties in finding a formal address to reach out to them.

FIGURE 3. SHARE OF EMPLOYMENT BY SIZE OF FIRMS



Source: Power for All (2022)

The Nigerian DRE market is relatively nascent compared to India and Kenya, but it has consolidated quickly. There are several reasons for the dominance of large players in this market. Access to finance is likely a key driver of this consolidation. Nigerian DRE companies are raising equity, debt, and grant funding from both concessional and commercial investors. However, most of the funding is being directed towards larger companies, especially those with an international footprint and who can fundraise in international markets. Local financiers, especially Nigerian commercial banks, appear to be somewhat reluctant to provide funds to the sector, though this hesitancy does seem to be gradually improving [10].

3. Workforce Profile

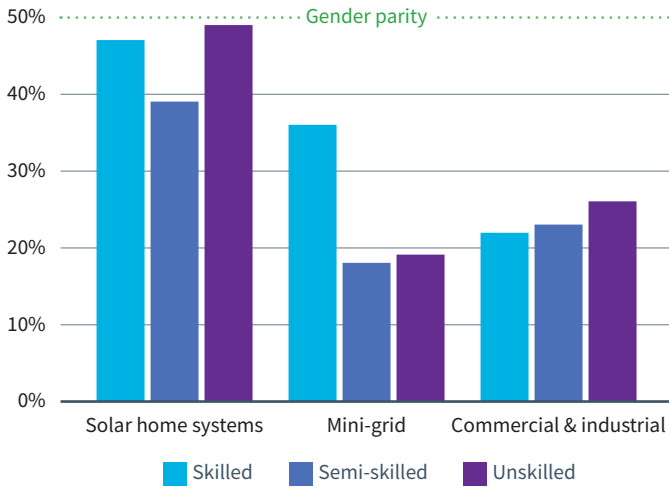
3.1 Women's Participation

As is the case in many other countries, the energy industry in Nigeria, including the DRE sector, is male-dominated. In 2021, women comprised 35% of the DRE workforce in Nigeria. This is lower than the rate of women's participation in the general economy, which currently stands at 44.2% [4]. Compared to 2018 data reported in *Powering Jobs Census 2019: Focus on Nigeria*, women's participation has increased significantly from 27% to 35% in 2021 [2]. The DRE companies that responded to the Powering Jobs Census 2022 indicated that they plan to raise women's participation in the sector to nearly 40% by 2023.

In the SHS subsector, women account for 45% of the workforce—a higher rate of participation than observed in the overall economy. On the other hand, the percentage of women in the mini-grid and C&I segments is only 24% on average. Figure 4 presents the current share of DRE roles, across different technologies and varying levels of skill, held by women.

In 2021, the Renewable Energy Association of Nigeria (REAN) published a study on women's participation in the renewable energy sector [28]. According to estimates from REAN's report, women comprised about 33% of the renewable energy workforce in Nigeria. However, REAN found that women tend to be overrepresented in non-STEM roles, accounting for 64% of the labor force, while the share of STEM roles held by women was only 8% [28]. Comparing the REAN findings to the Powering Jobs Census 2022, the rate of women's participation in the DRE sector appears similar to that of the broader renewable energy sector. The DRE sector also exhibits similar characteristics to the renewable energy sector in the under-representation of women in technical and STEM roles.

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



Source: Power for All (2022)

Nigerian women face various barriers that limit their involvement in the renewable energy sector in general and in the DRE sector in particular. One challenge is gender stereotyping, such as beliefs that women cannot excel in technical roles. Yet DRE companies that are more willing to hire women indicate that they struggle to find women applicants with the prerequisite skill [28]. This may be caused by women opting out from applying to open positions in the DRE sector due to real and perceived barriers in the sector.

Despite these challenges, Nigerian women have recorded impressive achievements in improving their status in the sector. As indicated above, compared to the first edition of the Powering Jobs Census, women’s participation has increased from 27% to 35%. FGD participants noted several factors that contributed to this increase. One factor is the women-focused skilling programs, such as Power Africa’s Women Leadership Initiative, which may have increased the pool of women applicants. In addition, most donor and government tenders require DRE companies have a reasonable percentage of women working in their companies. This requirement has served as an incentive for DRE companies to hire more women.

3.2 Workers’ Skill Levels and Training

According to the results of the Powering Jobs Census 2022, a Nigerian DRE worker received, on average, 70 hours of internal training and 44 hours of external training. Among the companies surveyed, about 69% indicated that they offer some kind of training, either

internal or external. External training is defined as any skill-development program supplied by the government, a non-profit, or other private sector players. In contrast, internal training is provided by the DRE firm itself. Of the firms offering training, 63% indicated that they offer internal training programs while 54% offer external training. The percentage of companies that offer internal training to workers in top management, skilled, and semi-skilled jobs is fairly equal (67% on average), but fewer companies offer internal training to unskilled workers (51%). Figure 5 illustrates the breakdown of training and skills programs in the Nigerian DRE sector.

The Powering Jobs Census 2022 identified nine crucial fields in which additional training is necessary, as highlighted in Figure 6. Most are hard skills, including finance, marketing, installation and commission, leadership, project management, and data analysis. A few are soft skills, including interpersonal skills and time management. The large share of the “other” category indicates that, unlike DRE markets in the other countries surveyed, Nigeria’s DRE market has greater variance in the skills desired among employers.

Nigerian DRE companies indicated that the shortage of skills required was felt across most roles but especially in production and assembly roles. Both DRE companies and external actors are implementing various initiatives to address these challenges. For instance, DRE companies such as Rubitec, Schneider Electric, and Blue Camel, offer training or scholarships within the broader DRE sector, in addition to training their employees. These programs

FIGURE 5. AVERAGE HOURS OF TRAINING FOR COMPANIES SURVEYED



Source: Power for All (2022)

cover technical skills, such as installation, as well as soft skills, such as leadership. The National Power Training Institute of Nigeria is a notable player in the sector that works in collaboration with local, national, and international public and private entities to train, study, and develop experts for the power sector [29].

Despite the ongoing efforts to address skill gaps, numerous bottlenecks exist that affect existing skill development programs. Participants in the FGD pointed out that there is no existing certification or authority that guarantees the quality of a training program. Additionally, there is an information gap around existing programs that limits companies from seeing the opportunity these training programs offer for a potential talent pool.

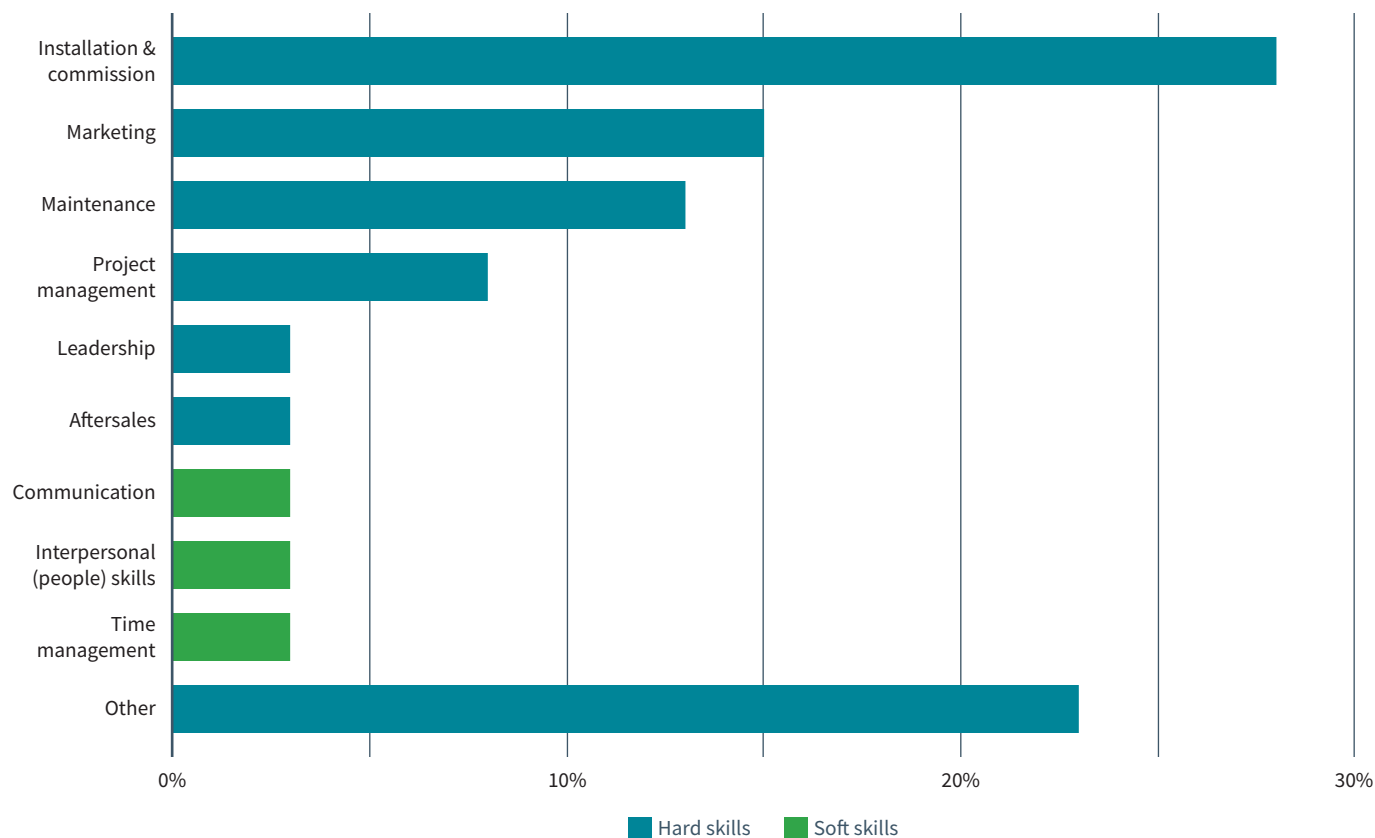
3.3 Levels of Compensation

According to the Powering Jobs Census 2022, average annual pay in the Nigerian DRE industry ranges from a little under US\$385 for

an unskilled worker in an SHS company to approximately US\$7,500 for top management in a C&I firm. In addition, the Nigerian DRE sector average wage for skilled and semi-skilled workers was found to be less competitive compared to average wages in urban parts of Nigeria. The estimated annual average wage for middle-class Nigerians is US\$6,750, more than the average salaries for DRE sector top managers in Nigeria (roughly US\$5,000) [30]. On the other hand, unskilled workers in the DRE sector earn more than the national average for rural non-farm income. The average annual income for unskilled workers in the DRE sector is US\$500, which is twice the national average annual income of workers in rural areas [31]. As most of the unskilled roles in the DRE sector are based in rural areas, they could serve as supplementary sources of income for rural off-farm laborers.

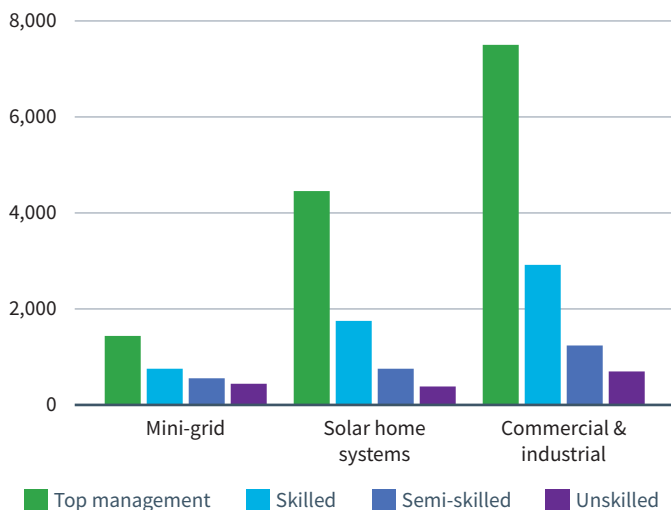
Analyzing wages across skill levels reveals disparities in pay. As can be expected, a gain in skill level is accompanied by an increase in remuneration. The self-reported compensation data indicates that

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



Source: Power for All (2022)

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



Source: Power for All (2022)

C&I companies pay the highest salaries followed by SHS. Mini-grid company workers, on average, are paid the least. This is in contrast to the compensation rate reported by other focus countries in which mini-grid companies typically tend to pay on the higher end of the spectrum compared to other DRE technologies.

Women in Nigeria’s DRE sector earn US\$93 for every US\$100 a man earns, according to the findings of the Powering Jobs Census 2022. Across the whole economy, women in Nigeria only earn US\$63 for every US\$100 that man earns. Hence, the DRE sector in Nigeria appears to have a lower gender pay gap than the broader economy.

4. Conclusions

The Nigerian DRE sector employed nearly 50,000 Nigerians in 2021, showing a fast recovery post-pandemic. The DRE sector is expected to continue its momentum; job growth is projected to be almost 25% per annum between 2021 and 2023, thereby recording nearly 75,000 jobs in 2023. In addition, the number of direct DRE jobs is fast approaching that of the oil and gas sector, which is currently estimated at 65,000 [17].

The SHS segment is the most dominant sector in terms of job creation, accounting for 95% of total direct employment in 2021,

and is expected to be the driver of job growth in the near future. Between 2016 and 2021, the Nigerian SHS sector registered an annual growth of 18% in sales volume [18]. The C&I and mini-grid segments contributed 5% of DRE direct sector employment in 2021. The share of direct employment from the C&I and mini-grid segments is expected to increase in the coming years due to substantial investment in both technologies, including the Nigerian government’s plan of deploying 10,000 mini-grids [26].

Informal employment accounts for 31% of all total direct employment in Nigeria. An estimate by the ILO in 2018 shows that 93% of all employment in Nigeria is informal [32]. Based on the census results, Nigeria’s DRE sector appears to have a lower informality rate than the national average. Further qualifying this, FGD participants mentioned that some firms converted some full-time employees to independent contractors due to the impact of COVID-19.

Large DRE companies dominate the employment landscape in Nigeria, accounting for 91% of the total workforce. The Nigerian DRE market is relatively nascent compared to India and Kenya, but it has consolidated quickly. There are various reasons for the dominance of the market by a few large players. Access to finance is likely a key driver of this consolidation. Most of the funding is being directed towards larger companies, especially those with an international footprint that can fundraise in international markets [10].

The participation rate of women in the DRE sector in Nigeria currently stands at 35%. This is a lower rate of women’s participation than the overall economy in Nigeria, which currently stands at 44.2% [4]. However, the percentage of women in the DRE labor force increased by 2% between 2020 and 2021 and is expected to grow to almost 40% by 2023.

In 2021 a Nigerian DRE worker received, on average, 70 hours of internal training and 44 hours of external training. Of the DRE companies surveyed, 69% stated that they offer some kind of training, either internal or external. Training programs that seek to improve the current skill levels of workers in the DRE sector are often carried out by DRE companies themselves.

The average annual wage for the Nigerian DRE industry ranges from a little under US\$385 for an unskilled worker in an SHS company to approximately US\$7,500 for top management in a C&I firm. Women in the DRE sector earn, on average, 93% of what men earn, reflecting a lower gender pay gap than the national average for Nigeria, which stands at 63%.

Box 1: Nigerian DRE employees speak about their passion to provide energy access

The DRE sector is composed of Nigerian workers from different religions, states, and skill sets, but they are united in their motivation to extend energy access to their communities. The Powering Jobs Census 2022 research team asked some DRE sector workers what they like about their work.



“My work is an expression of my service to humanity and I like the fact that I’m helping to light up Africa. The pandemic further accentuated the need for electric power as an absolute necessity for all rather than a luxury for a select few as the lockdown period was unbearable for most of the time due to the frequent electric supply blackout from the grid.”

John Ufeoshi
PowerGen Renewable Energy



“It has been a dream come true for me transitioning from the telecommunication end to the power sector in Nigeria. Improving lives, economic growth, and driving rapid development through the provision of energy-efficient power have been the core of my professional goals. Working remotely due to the lockdown, brought about changes in operational effectiveness. This ensured we were able to still deliver on our mission to power up Africa and impact millions of lives positively.”

Nina Iteaugbor
PowerGen Renewable Energy

Photos generously provided by: Mobisol/ENGIE (cover) and PowerGen Renewable Energy (p. 12).

The opinions expressed in this report are those of the authors, and do not necessarily reflect the views of funders or partners.

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