MARKET INTELLIGENCE USING GOGLA DATA

Sales and investment data from the Global Off-Grid Lighting Association (GOGLA) provide details about the off-grid solar sector in DRC. Sales of pico-solar systems in DRC since 2014 have fluctuated greatly and peaked in 2017. Data show that sales are generally higher for solar lanterns, while sales of solar home systems (SHS) are limited. There are no exact data available on levels of pay-as-you-go (PAYGO) sales compared to cash sales. The majority of payments have been in cash. PAYGO is relatively new in DRC, but more companies are starting to adopt it. BBOXX entered the DRC market in late 2017 and, to date, has electrified more than 75,000 customers across DRC with PAYGO solar. Additionally, BBOXX has been a founding member and serves as Vice President of the industry association ACERD. Through this channel, BBOXX has played a key role in government by lobbying on behalf of the sector to improve the overall PAYGO solar business environment for the benefit of future players.

Sale of Solar Units (0 - 10 Wp)
Jan 2017 - Dec 2018

The figure includes sales of SHS, solar lanterns, and other solar products between 0 and 10 Wp (Watt peak); GOGLA could not disaggregate this data to the product level for all periods.

So far, investment in Central Africa off-grid solar has been almost entirely through crowd-funded initiatives ($1.38 billion in 2018) and government or donor funding ($3.75 billion in 2017). The year 2017 was Central Africa’s largest investment year ($4.05 billion). Investments in 2017 and 2018 mainly focused on regional expansion and scaling up of existing business models. There was a significant increase in crowdfunding in 2018, which indicates a positive trend for future investments in Central Africa.

INVESTMENT OPPORTUNITIES

• In 2016, the Gross Domestic Product (GDP) of the Democratic Republic of Congo (DRC) was approximately $35 billion. DRC is the second largest country in Africa but has relatively little high-voltage transmission infrastructure and unreliable generation capacity. The lack of grid infrastructure may present an opportunity for increased electrification through less costly mini-grid development. While there is some limited investment in mini-grid projects in DRC, growth in this sector is held back by political instability, lack of regulatory frameworks to support mini-grid development, and the general difficulty of doing business in DRC.

• 65% of households without access to electricity own land suitable for agriculture, and 50% own livestock. However, only 10% of arable land is used, forcing DRC to import most of its food. DRC has a need for solar systems to power irrigation and process crops or animal products, such as peanuts, palm oil, milk, and meat. Additionally, productive-use solar systems are critical in DRC’s refugee camps.

• DRC has one of the lowest rates of banking participation in Africa at around 6% and financing options for solar products are very limited due to the perceived repayment risks. Increased mobile money availability and design of financing mechanisms specifically for off-grid solar products could encourage increased adoption of SHS and pico-solar.

Power Africa aims to achieve 30,000 megawatts of new generated power, create 60 million new electrical connections, and reach 300 million Africans by 2030.

Full report available online at: usaid.gov/powerafrica/beyondthegrid
The DRC's undeveloped grid electrification sector translates to a huge opportunity for the solar-energy sector. Given that SNEL only has 500,000 connections, it is not far-fetched to forecast that DRC could become the first country in which the virtual grid surpasses the physical one—where more people are connected with SHS than through the grid.

### Commercial Finance.

The Congolese market is occupied by 13 banks of different state local banks such as Rawbank, Société Générale, and Trust Merchant Bank (27%); Pan-African banks, such as Access Bank, Afirland First Bank, and Ecobank International (9%); and national banks, such as Atrunex Group, Cogir Group, and Standard Bank (3%). Rawbank, created in 2002, was the first bank in the country. Rawbank supports the private sector, particularly small and medium enterprises (SMEs) and other products are starting to emerge, often offered to employees, since the existence of an employment contract is a form of guarantee that reduces banks' perceptions of risk. Generally, customers make payments for energy systems through a deduction from an employee's monthly salary at the source, which is an additional guarantee for the bank.

### Policy and regulation.

The Ministry of Energy and Hydraulic Resources (MEHR) is the main authority in the electricity sector. In addition to overseeing the national utility, SNEL, MEHR's responsibilities include planning, policy development, and oversight. Electricity Law No. 14/01—which the Government of DRC put into effect on June 17, 2014—removed SNEL's monopoly. However, the law contains no specific mention of pico-solar systems, only grid and mini-grid systems.

### Associations.

Leading renewable energy companies in DRC, with support from the Department for International Development’s (DFID) ELAN program, established the Congolese Association for Renewable and Decentralized Energy (Association Congolaise pour les Energies Renouvelables et Décentralisées [ACERD]) in July 2018. ACERD’s primary objective is to coordinate among DRC energy companies to respond to DRC’s energy-access problems. Members include major players, such as BBOXX, Greenlight Planet, BURN, Absac, and Dev Solaire.

### MINI-GRID

It is estimated that 61 million people could be connected to mini-grids in the future, with a private market value of $2.1 billion (assuming household spending comprises 60% of the total output of a mini-grid, along with revenue from businesses, public service buildings, and industrial users). One man population centers beyond the existing grid represent a theoretical mini-grid market of ten million people, worth $135 million a year. This is an early estimate that assumes the entire population of three centers could be connected to mini-grids. Current electrification plans are either related to large hydropower projects such as Inga 3 and Ruzizi 3 or mini-grid systems.

### Estimate of households without access to electricity per 10km, DRC, 2019

<table>
<thead>
<tr>
<th>10km</th>
<th>0%</th>
<th>19.1%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2017)</td>
<td>(2025 target)</td>
<td></td>
<td></td>
</tr>
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Note: Only areas with at least 50 households per 10km2 are shown in squares.

### KEY STATISTICS

- **GDP**: $35 billion
- **GDP growth potential**: 2-4% annually
- **Population size**: 85.8 million
- **Population density**: 38 people per km2
- **Population growth rate**: 3.24%
- **Household size**: 5.3
- **Rate of urbanization**: 54.6%
- **Urban | Rural population**: Urban: 40.7% | Rural: 59.3%
- **Languages**: French, Kikongo, Lingala, Swahili, Tshiluba

### Estimate of households without access to electricity per 10km, DRC, 2019

- **Households without access to electricity**
  - Power line 500 - 1000
  - Power line 1000 - 1500
  - Power line 1500 - 2000
  - Power line 2000 - 3000
  - Power line 3000 - 4000
  - Power line 4000 - 5000
  - Power line 5000 - 6000
  - Power line 6000 - 7000
  - Power line 7000 - 8000
  - Power line 8000 - 9000
  - Water schemes on site
  - High-voltage network

Source: Power Africa Geopolitical Analysis 2019

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**Main provider of electricity.** The state utility in DRC, the National Electricity Company (Société Nationale d’Électricité [SNEL]), has a long track record of operational and financial underperformance. This is due to a high rate of illegal meter connections and an average electricity tariff of $0.07/kWh, which is one of the lowest in Africa. SNEL has 500,000 registered connections, including those through two hydroelectric and nine diesel mini-grids.

**Plan to increase electricity access.** In 2018, the government drew up the National Plan for Strategic Development (Plan National Stratégique de Développement [PNDD]), containing only one section devoted to electricity-sector development, and DRC still has no national policy or regulatory authority for electricity supply.

**Constraints to rural electrical grid extension.** One of the biggest challenges local solar companies face is access to finance, particularly consumer finance, because many households are not able to pay for cash systems and do not yet have access to mobile banking. Many potential off-grid customers live in remote areas of the country, making it difficult for companies to reach them in an inexpensive and timely manner.

**Political and policy reforms.**

- **Rural electrification.** The government plans to develop 33 mini-grids in the country by 2020. DFID aims to support 33 solar mini-grids across the country through the “For an Energy Access and Services Expansion (EASE) program. The 2014 Electricity Law states that the electricity sector involves both central and provincial governments, with MEHR overseeing all electricity projects and distribution, including mini-grids.

### SHS AND PICO-SOLAR

The DRC’s undeveloped grid electrification sector translates to a huge opportunity for the solar-energy sector. Given that SNEL only has 500,000 connections, it is not far-fetched to forecast that DRC could become the first country in which the virtual grid surpasses the physical one—where more people are connected with SHS than through the grid.

The leading pico-solar company in DRC is Altech Group, which had over 170,000 PAYGO-enabled solar-cleaning technology sales since 2013 and at least $500,000 in funding. By 2030, Altech Group aims to sell two million products, which will positively impact millions of people and create 2,000 jobs. Other active companies include J&J (about 87,450 sales since 2016), Ecomwinda (more than 35,000 since 2013), and Dev Solaire (more than 25,000 since 2013).
### Off-Grid and Mini-Grid Electrification

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#### Key Statistics

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<td>1000</td>
<td>1800</td>
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<td>2000</td>
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<td>3000</td>
</tr>
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<td>3000</td>
<td>3500</td>
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<td>100–200</td>
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<td>8000</td>
</tr>
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**Source: Power Africa Geospatial Analysis 2019.**

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The Congolese economy is oriented toward maximizing natural-resource exploitation and trade. In 2017, the Government of DRC signed the United Nations’ Sustainable Development Goals, which set the stage for the ‘Plan National Stratégique de Développement [PNSD]’, which contains only one section devoted to electricity-sector development, and DRC still has no national policy or regulatory authority for electricity supply.

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Sale of Solar Units (0 - 10 Wp)
Jan 2017 - Dec 2018

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INVESTMENT OPPORTUNITIES

• In 2016, the Gross Domestic Product (GDP) of the Democratic Republic of Congo (DRC) was approximately $35 billion. DRC is the second largest country in Africa but has relatively little high-voltage transmission infrastructure and unreliable generation capacity. The lack of grid infrastructure may present an opportunity for increased electrification through less costly mini-grid development. While there is some limited investment in mini-grid projects in DRC, growth in this sector is held back by political instability, lack of regulatory frameworks to support mini-grid development, and the general difficulty of doing business in DRC.
• 65% of households without access to electricity own land suitable for agriculture, and 50% own livestock. However, only 10% of arable land is used, forcing DRC to import most of its food. DRC has a need for solar systems to power irrigation and process crops or animal products, such as peanuts, palm oil, milk, and meat. Additionally, productive-use solar systems are critical in DRC’s refugee camps.
• DRC has one of the lowest rates of banking participation in Africa at around 6% and financing options for solar products are very limited due to the perceived repayment risks. Increased mobile money availability and design of financing mechanisms specifically for off-grid solar products could encourage increased adoption of SHS and pico-solar.
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- Power Africa geospatial analysis estimates that 84% of the population lacks electricity access and 61 million people live in communities that are likely suitable for mini-grid development. While there is some limited investment in mini-grid projects in DRC, growth in this sector is held back by political instability, lack of regulatory frameworks to support mini-grid development, and the general difficulty of doing business in DRC.

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