
POWER FOR ALL RESEARCH SUMMARY

Mini-grid market opportunity assessment, DR Congo

**POWER
FOR
ALL**

80 Million

THE POPULATION ON THE
DRC

9%

ESTIMATED NATIONAL
ELECTRIFICATION RATE IN
THE DRC

\$921 Million

POTENTIAL ANNUAL MINI-GRID
MARKET

SEforAll Africa hub in conjunction with the African Development Bank recently published a Mini-Grid Market Opportunity Assessment of the DRC¹ as part of the Green Mini-Grid Market Development Programme (GMG MDP) document series. Here we highlight the key messages:

The DRC is one of the least electrified countries on the continent.

- » Home to 80 million people, the DRC is the largest and fourth most populated country in Africa (7) but also the least electrified. National electrification is estimated to stand at 9% (7).
- » The electricity sector in DRC is characterized by low electrification rates and an underdeveloped and dysfunctional grid. A significant portion of consumers are connected illegally (only 500,000 can be accounted for) (7).
- » The electricity access rate is above 50% in only Kinshasa and the territories of Sakania, Kipushi, Beni, and Moanda. In ten districts the rate is above 20%, and in all but twelve of the remaining districts the rate is below 5%.
- » Most of the country is not covered by the national grid and will likely remain so for the foreseeable future, due to the size of the country, the grid's limited current reach and limited investments in transmission (37).
- » Currently mining companies such as SOKIMO and MIBA own hydro plants and inject excess energy in local grids (31).

Green mini-grids have significant market potential in DRC.

- » Based on current grid coverage the report estimates that 61 million people could be connected to mini-grids, for an annual market potential of US\$921 million (7,15) (assuming household spending comprises 60% of the total revenue of a mini-grid when including revenue from businesses, public sector buildings and industrial users (17).
- » The market may be even larger if mini-grids are feasible in areas of grid proximity, due to limitations of the national power network assets.
- » Hydro and solar powered mini-grids have the largest potential to accelerate electrification rates. The DRC has 100GW of hydro potential (the greatest in Africa), of which only 2.5GW have been developed. Solar energy is abundant in DRC with most potential in the south (8,24,26)
- » In sum, factors that make the country suitable for mini grid development include: a massive population, low electricity access, currently unreliable service and sizeable renewable energy potential, including the biggest hydro potential in Africa. (13)

The government has developed some policies to assist in the Renewable Energy Sector. For instance:

- » The Electricity Law of 2014 opened the power sector to private operators. The Law removed the national utility's (SNEL) monopoly status and laid the foundation for a new legal framework to promote public-private partnerships and private investments. (8,29)
- » Further, the government's Modern Villages programme aims to electrify 100 villages using hydro-based green mini-grids, but implementation is slow (31). Import duties and Valued Added Tax (VAT) have been lifted for generation equipment including renewable generation (34).

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- » However large hydro projects have attracted the majority of funding to the energy sector – The African Development Bank (AfDB) and the World Bank (WB) have provided a US\$377 million grant for the rehabilitation of Inga 1 and Inga 2, a US\$68 million grant for the development of the Inga 3 hydro plant, a US\$106.5 million technical assistance grant for the creation of the Grand Inga Development Authority and other medium scale hydro projects (30).
- » Nevertheless, DFID and the World Bank are committing significant funding to further development of mini-grids over the next five years (32). DFID aims to support 33 solar mini-grids across the country through the Essor Program while the World Bank aims to develop mini-grids in all electrified provincial capitals and major population centers through EASE (13).
- » Furthermore, a Renewable Energy Atlas for DRC was produced in 2014 by UNDP and is currently being updated. The Atlas is available in publicly available data (34).

Despite this progress, it hasn't been easy for mini-grids and citizens in the DRC. Here's why:

- » A volatile political situation in the country, a non-enabling business environment, and poor infrastructure, making several regions of the country accessible only by air transport. These practical challenges affect investments and prospects for rapid sector development (11).
- » The national utility, SNEL, has a long track record of operational and financial underperformance (29). Many generators run well below capacity due to lack of maintenance. (24)
- » The energy sector as a whole faces additional problems of a weak and non-operational institutional framework, insufficient capacity and lack of information and data (33).

Share the Message

Challenges of expanding the national grid coupled with the size of the country, make the Democratic Republic of Congo a prime market for green mini-grid developers. However, much support is needed. Join Power for All in sharing this message:

- » Policy makers and planners in the DRC should formally recognise the importance of mini-grids to the future development of the energy sector in policies and plans.
- » Critical support is needed to promote capacity development of potential local mini-grid developers and to work with financial institutions to reduce investment risk locally.
- » Financing mechanisms to reduce the cost of access to electrification for poor communities, such as incentives for decentralized technologies, are needed.

Sources:

1. [Mini-grid Market Opportunity Assessment: DRC. \(2017\). Green Mini-grid Market Development Programme.](#)

Page numbers are cited in parentheses. This Research Summary was produced in partnership with the Strathmore Energy Research Center.