

# ARC POWER

## PROJECT SUMMARY

The first phase of an ambitious scheme to build a large portfolio of mini-grids in Rwanda is under way after its British-based developer secured GBP 900,000 in convertible loans from REPP.

As of April 2021, REPP's critical early-stage support for the project had enabled ARC Power Ltd to complete two mini-grid generation systems serving six distribution networks. The networks provide electricity to seven villages in Bugesera District and have so far connected 7,030 people and 127 microbusinesses to electricity for the first time.

Once all eight mini-grids in the initial phase of the project have been completed, ARC Power will begin on the second and wider roll-out of up to 90 further mini-grids. These additional mini-grids will boost the project's total generating capacity from 0.07MW to 2.24MW and connect up to 145,000 people to clean energy for the first time. The company is currently in the process of raising GBP 10m in debt and equity to support the second phase with financial close expected by Q4 2021.

Energy from the mini-grids is being offered on a pre-pay, pay-as-you-go basis to off-grid communities currently with no access to clean energy, and who mostly rely on more expensive and polluting sources of energy such as kerosene for lighting.

The portable and modular mini-grids were developed by ARC Power and can each connect between 100 and 600 households or businesses in a village, providing productive-use, A/C power for lighting and mobile charging, as well as the ability to use appliances and machinery, enabling the development of small businesses. The modular nature of the units also allows for increased capacity to be added following the initial installation, ensuring that supply can be ramped up in line with demand.

Over 60 jobs have been created so far during the initial phase, of which 40% are held by women. The full project is forecast to result in 200 jobs during construction and a further 40 during operation. Once completed, the mini-grids will provide enough clean electricity to meet the needs of up to 145,000 people living off-grid in Rwanda, which currently has an estimated national electrification rate of 30%, and just 12% in rural areas.

The Rwandan government has set a target to provide universal energy access by 2024. If successful, the project will prove the case for large-scale off-grid solar PV solutions in Rwanda, and catalyse interest from the commercial sector.

REPP funding is being matched by private Swedish impact investors.



### Country policy alignment

Supports Rwanda's conditional NDC (2020) targets to reduce GHG emissions by 38% and install 68MW of solar PV mini-grids in rural areas by 2030. Project is in line with Rwanda's Energy Sector Strategic Plan (2018) target to electrify 1.5m households through off-grid solutions by 2024.



**Location**  
Rwanda

## AT A GLANCE

### Technology:

Solar PV  
mini-grids



### Project type:

Off-grid

### Offtaker:

Off-grid communities

## KPIs



Greenhouse gas emissions avoided: Phase 1: 263 tCO<sub>2</sub>e p.a., whole project: 4,906 tCO<sub>2</sub>e p.a.



People with new energy access: Phase 1: 5,625, whole project: 145,000



Installed capacity: Phase 1: 0.12MW, whole project: 2.24MW

## FUNDING STRUCTURE

### INITIAL LOAN

**Signed:** 18 February 2019

**Type:** Convertible loan

**REPP funding:** GBP 600,000

### ADDITIONAL LOAN

**Signed:** 13 May 2020

**Type:** Convertible loan

**REPP funding:** GBP 300,000

## SDGs



"We have huge ambitions for ARC Power in Rwanda and the region. The funding from REPP will allow us to press forwards with our national rollout, providing affordable, reliable and clean power to around 145,000 people in these next two phases."

Karl Boyce, CEO, ARC Power