

PROJECT BRIEF

# CLEAN CAPTIVE INSTALLATIONS FOR INDUSTRIAL CLIENTS IN SUB-SAHARA AFRICA



## ABOUT THE PROJECT

### THE CHALLENGE

The biggest economies in sub-Saharan Africa have well-established industrial sectors. However, most of them face challenges in terms of further growth due to unreliable or expensive grid-supplied electricity.

Ghana, Kenya, Nigeria and South Africa are no exceptions. Expansion of their national industrial sector is hindered by shortage of power, high-energy costs and lack of efficient transmission infrastructure. Accordingly, diesel-powered generators are widely used to back-up the grid or mitigate its fluctuations or as substitutes where there is no grid access. This in turn has a two-fold effect: it increases the total cost spent on electricity for a firm, thereby reducing its profit margins; and it generates greenhouse gas emissions that accelerate climate change and cause pollution and health problems.

#### What are captive installations?

Captive installations refer to the energy generating technologies installed by industrial or commercial organizations on their sites. Those installations are deemed captive as the electricity produced is generated for the industrial plant's own use and sometimes for neighbouring communities'. Clean captive installations refer to those installations powered by renewable sources of energy such as solar or industrial waste.



To meet the climate and development goals of the Paris Agreement, the 2030 Agenda, as well as the Agenda 2063 of the African Union, developing countries will strive to engage on a low-carbon development pathway, minimizing their emissions whilst ensuring development of their economies. Renewable energy is a key part of their strategy to do so, with localized solutions for industry holding great potential.

This is why the UN Environment Programme, in partnership with its collaborating centre at Frankfurt School of Finance and Management, is implementing **“Clean Captive Installations for Industrial Clients in Sub-Saharan Africa”** in four African countries: Ghana, Kenya, Nigeria and South Africa.

This project is part of the International Climate Initiative (IKI) of Germany. The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety supports this initiative based on a decision adopted by the German Bundestag.

The project aims to demonstrate the economic and financial viability of clean captive energy installations for industries and enhance their adoption of a replicable model in the four partner countries and beyond to the entire continent. Captive renewable energy installations alleviate the pressure of electricity generation from national grids and reduce industrial clients' needs to rely on private supplementary fossil-fueled generators, which are expensive to run. These clean captive installations are frequently referred to as second generation of renewable energy business models, as they do not rely on national governments' incentivizing policies to enhance the deployment of clean energy technologies.

The project will strengthen the ability of countries to move towards low carbon-emitting development strategies. It also contributes to several Sustainable Development Goals, including Climate Action (SDG 13), Responsible Consumption and Production (SDG 12), Affordable and Clean Energy (SDG 7), and Industry, Innovation and Infrastructure (SDG 9). The project will raise awareness amongst industry players, financiers and governments, and support dissemination of clean modern energy technology and leapfrogging of the right business models in sub-Saharan Africa.

Engaging with national public authorities and private sector actors, the project focuses on the financial barriers that hinder the greening of private clean energy generation installations. Industrial actors could turn to available and cost-competitive captive renewable energy sources but are often reluctant to increase their capital intensity for non-core business activities and find it difficult to access third party finance.

## PROJECT ACTIVITIES

## PARTNERS COUNTRIES

Ghana, Kenya, Nigeria and South Africa have been selected due to some of the following reasons: the size and growth of the economy, the existence of an electricity supply gap or an unreliable supply, high end-user tariffs for industrial users and the project's convergence with government strategy. Depending on the local baseline circumstances, clean captive industrial installations provide clean reliable electricity supply, energy cost savings, autonomy from the grid supply, or a combination of those elements.

The lessons learnt and knowledge created by the project will be shared within the partner countries and beyond to the sub-Saharan African region to enhance awareness and replication.



## TIMELINE

The project will run from 2019–2023 as follows:

<b>Component 1:</b> Baseline studies and awareness raising	2019
<b>Component 2:</b> Economic and financial tools and assessments	2019 –2020
<b>Component 3:</b> Realization of one pilot project per country	2020 –2023
<b>Component 4:</b> Knowledge dissemination and outreach	2019 –2023

The project's activities fall under four components:

### Component 1:

#### Baseline studies and awareness raising

Awareness of the project is raised with both public and private sector stakeholders, whose feedback is integrated into the project design. This initial phase sees country studies being prepared and scoping missions completed in each partner country.

### Component 2:

#### Economic and financial tools and assessments

Tools for assessment of financial and economic viability and suitable financing structures of clean captive installations are elaborated and disseminated among industrial and commercial actors, national and international financiers, and national public institutions. The selection criteria for the national pilot projects are defined.

### Component 3:

#### Realization of one pilot project per country

Four viable and replicable pilot projects with industries, one in each partner country, are selected, developed, financially structured, realized and monitored. The country-tailored business models will allow for replicability at the national scale, and in similar contexts.

### Component 4:

#### Knowledge dissemination and outreach

Through a knowledge management strategy to be designed jointly with stakeholders, case studies on pilot projects are prepared and published, project results and knowledge disseminated through national, regional and other events and other relevant means to allow replication at both national and regional levels.





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For more  
information

visit the project website  
[www.captiverenewables-africa.org](http://www.captiverenewables-africa.org)

## ABOUT UN ENVIRONMENT PROGRAMME



The United Nations Environment Programme (UN Environment) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment. Our mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

For more details see [www.unenvironment.org](http://www.unenvironment.org)

## ABOUT FRANKFURT SCHOOL



Frankfurt School  
FS-UNEP Collaborating Centre  
for Climate & Sustainable Energy Finance

Frankfurt School of Finance & Management is a research-led business school, which offers educational programmes covering finance, economics and management. Frankfurt School experts manage advisory and training projects on financial matters in emerging markets and developing countries, especially on topics related to microfinance and renewable energy finance. In 2011 Frankfurt School established a collaborating center with UN Environment - the Frankfurt School UNEP Collaborating Centre for climate and sustainable energy finance.

For more details see [www.frankfurt-school.de](http://www.frankfurt-school.de)

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INTERNATIONAL CLIMATE INITIATIVE (IKI)



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