MEETING REPORT | GHANA

CLEAN CAPTIVE INSTALLATIONS FOR INDUSTRIAL CLIENTS IN SUB-SAHARA AFRICA

Official Project Launch and First Stakeholder Consultative Meeting
24 September 2019 - Accra, Ghana

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

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

UN environment programme

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

OFFICIAL PROJECT LAUNCH

AND

FIRST STAKEHOLDERS CONSULTATIVE MEETING IN GHANA

Date and time: Tuesday 24th September 2019 from 9.30 a.m. to 1.00 p.m.

Venue: Ministry of Energy, Ghana, Accra

OFFICIAL LAUNCH AND FIRST STAKEHOLDERS CONSULTATIVE MEETING IN GHANA

The United Nations Environment Programme, Frankfurt School of Finance and Management and the Ministry of Energy in Ghana jointly organized the launch of the project "Clean Captive Installations for Industrial Clients in sub-Sahara Africa". This meeting took place at the office of the Ministry of Energy in Accra, Ghana, on Monday 24th September 2019, from 9.30 a.m. to 1.00 p.m.

The UN Environment Programme is initiating this project in partnership with its collaborating centre at Frankfurt School of Finance and Management who are the implementing partners of the project. The project's four target countries are namely: Ghana, Nigeria, Kenya and South Africa. This project is funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through the International Climate Initiative (IKI).

One of the main catalytic sectors of the economy in sub-Sahara Africa are the commercial and industrial (C&I) sector. However, the expansion and growth of the national C&I sector is being hindered by (i) shortage of reliable power and (ii) high alternative-energy costs. As a result, 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 increases the total cost spent on electricity, thereby reducing profit margins, and generates GHG Emissions that accelerate climate change and causes pollution and health problems.

Therefore, the project's main objective is to demonstrate the economic and financial viability of clean captive energy installations for industries in the identified countries, thereby helping the C&I sector to reduce their over-dependence on the national grid and limit their usage of diesel generators. The project will focus on second generation of renewable energy business models, which do not rely on national governments' financial incentives (Feed-in-Tariffs or other scarce public money) to enhance the deployment of clean energy technologies.

Currently, a series of scoping missions in the four target countries are being conducted to collect relevant data and information that would be the basis to develop appropriate tools and guidelines to develop various business and financial models. The first day of each scoping mission is dedicated to the official launch of the project and the first stakeholder consultative meeting is being held in each of the four target countries.

The first scoping mission of the project's team started in Kenya on 16th September 2019 where the project was launched, and the first stakeholders meeting took place at the same time.

The stakeholder consultative meeting in Ghana was held with the objective of creating country's ownership and buy-in for effective and efficient implementation of the project in Ghana. In this meeting, various national public authorities and private sector actors were engaged, with a focus on discussing key barriers including policy and financial

barriers that hinder the greening of private clean energy generation installations including factors that limit economic activity and country development.

1. HIGHLIGHTS OF THE MEETING

1.1 Opening Session

The launch of the project and the inaugural stakeholder consultative meeting in Ghana hosted about 18 participants. These participants included representatives from the Ministry of Energy, Environment Management Authority, National Energy Authority, National Electric Utility, National Cleaner Production Centre, and other private sector actors.

The UN Environment Programme and Frankfurt School used this platform to introduce the project objectives, activities and expected outcomes to the stakeholders and received feedback from these stakeholders to optimise implementation of the project. The information received added much value to the scoping missions that were held immediately after this meeting from 25-28 September 2019.

The opening remarks were delivered by representatives of the Ministry of Energy, the UN Environment Programme and Frankfurt School. In his opening remarks, Mr. Lawrence Apaalse, Chief Director of the Ministry of Energy indicated that the energy system in Ghana is going through challenging times. He also mentioned that the Ministry is looking forward to the results of this project study and believes that the implementation of a pilot project for industrial clients will be a good demonstration model to showcase the viability and sustainability of renewable energy installations.

Mr. Apaalse, on behalf of the Ministry of Energy, appreciates the initiative as the project is geared towards the use of clean energy which will help reduce Green House Gases in the atmosphere. He mentioned that although Ghana currently has an over-supply of installed generation capacity, the country is occasionally confronted with power supply shortages predominantly due to fuel supply challenges, low water levels for hydro electricity generation and transmission line capacity constraints. He therefore believes that clean captive power will be economically and financially beneficial since there will be no need for transmission lines which will in turn reduce inefficiencies associated with such transmissions lines.

In a similar vein, Ms. Françoise d'Estais, representing the UN Environment Programme, thanked the Ministry of Energy for launching the project and hosting this public consultative meeting in Ghana. She also indicated the readiness and commitment of the UN Environment Programme to respond to the needs and expectations of Ghana towards the country's own objectives of developing low carbon, climate resilient and resource efficient energy systems.

Subsequent to this session, the project team delivered two presentations that focused on the project highlights and preliminary results of the desk studies on the Ghana energy market.

1.2 Project Highlights

Ms. Meseret Zemedkun, representing the UN Environment Programme presented the

highlights of the project including the rationale, objectives, activities and expected output of the project.

She stated that one of the main catalytic sectors of the economy in sub-Sahara Africa is the C&I sector, and that the expansion and growth of national industrial sector is being hindered by (i) shortage of power due to inefficient transmission and distribution infrastructure (amongst others) and (ii) high-energy costs.

She added that industrial clients predominantly use diesel-powered generators to back-up the grid, mitigate its fluctuations, or use it as substitutes where there is no grid access. This in turn has a two-fold effect: (i) it increases the total cost spent on electricity thereby reducing profit margins and (ii) it generates GHG emissions that accelerate climate change and cause pollution and health problems.

She indicated that the project's main objective is to demonstrate the economic and financial viability of captive clean energy installations for industries in the target countries, thereby helping the C&I sector to reduce their over-dependence on the national grid and limit their usage of diesel generators. The project will focus on second generation of renewable energy business models, which do not rely on national governments' financial incentives (Feed-in-Tariffs or other scarce public money) to enhance the deployment of clean energy technologies.

The overall expected outcome is a sustainable business model which creates value for the user and reduces the burden on the grid operator and this will be proven through economic and financial analysis and the establishment of a track record for captive RE industrial installations.

1.3 Preliminary results of desk review

Ms. Madhumitha Madhavan, the project manager from Frankfurt School, gave a brief presentation that covered the tasks undertaken so far. This included details on project initiation through desk-studies and stakeholder consultations, the Frankfurt School-UNEP technical assistance and final the expected outcome.

The key preliminary findings from the desk-study report were:

- Ghana has an over-supply of installed generation capacity but faces severe electricity supply challenges
- Renewable energy development is a key pillar in Ghana's Nationally Determined Contributions under the Paris Agreement
- There are a number of renewable energy enabling instruments in place
- Ghana has the highest electricity costs for C&I facilities in sub-Sahara Africa
- Ghana's financial sector is diverse & competitive, but has not yet taken a step into RE finance

From the initial analysis, Ms. Madhavan mentioned that Ghana might have an over-supply of installed generation capacity with nearly 5,082 MW excluding any captive installations, vs. peak electricity demand of 2525 MW in 2018. This generation capacity

comprises of c. 40% hydro, 60% thermal and less than 1% solar power. However, most of these installed generation facilities are not available for generation due to fuel supply challenges.

The Asokombo dam which is the main source of hydro power consistently has low water levels which make it un-operational. Because of this, a number of thermal power plants were constructed, and these rely heavily on natural gas, but the supply of natural gas from the West African Gas pipeline has also been rather unreliable.

In this context, grid electricity becomes unstable as well as unreliable in Ghana, especially for the industrial sector who are the largest end-clients for consuming electricity. This problem of unreliable grid connection, has resulted in an average of $2.1 million loss of production per day in the last decade during the energy crisis period, as a result of which industries have transitioned to rely on expensive diesel gensets, which reduce profit margins significantly in addition to polluting the environment.

She also mentioned, given that Ghana wants to achieve universal access to electricity by 2025 under the national electrification scheme, the project believes that captive installations will help supplement poor & unreliable grid connection and help Ghana stay committed to its RE development under the Paris Agreement.

She then suggested a two-fold solution that includes: (i) supplementing existing diesel gensets with captive solar PV for backing-up the grid and (ii) increasing the share of PV electricity usage to reduce over-dependency on grid-supplied electricity.

2. DISCUSSION

The interactions among various stakeholders and their comments and input on the project to optimise its implementation and achieving its objective was remarkable.

The areas of discussions were mostly focused on:

- Demand and Supply of power for both commercial and household uses
- Type of technology to be used as a prime solution: most of the stakeholders including Ministry of Energy and Environmental Management Agency were in favour of biogas technology using various agricultural wastes
- Policy and regulations that allow for a conducive environment for C&I users and private sectors to generate power especially in the grey area between 100 KW to 500 KW
- The means of implementation of national policies at county levels
- Financing barriers

The stakeholders were also keen to learn more about the process and criteria of selection of pilot projects. Some of the stakeholders such as the National Cleaner Production Centre also showed interest to take part in the implementation of these pilot projects.

3. WRAP-UP MEETING

As per the request of the Ministry of Energy, a wrap up meeting was held on Thursday 26th September 2019 at the office of the Ministry of Energy. This wrap up meeting was chaired by engineer Chris Anaglo, Director for Power distribution representing the Ministry of Energy.

The main focus areas discussed during the wrap up meeting include:

(i) Policy and regulatory issues: The need for clarity for generation between 100 KW and 500 KW. The Ministry agreed to request the Energy Commission of Ghana to provide clearer direction on this segment of the market

(ii) Technology: The Ministry of Energy requested the project team to have flexibility in the choice of technology including biogas, small hydro, wind as well as solar PV. The Ministry and Environment Management Agency shared its best practices in the use of biogas technology for clean captive installations in Ghana

(iii) Finance: The Ministry of Energy agreed that financial barriers that exist include high rates of lending arrangement for industries and foreign exchange risks. The Ministry indicated that it will look into the levels of support that can be provided to get concessional financing for industrial clients.

4. SUMMARY AND RECOMMENDATIONS

In general, the meeting met its objectives by creating project ownership of all relevant stakeholders. The project also fulfilled the following objectives:

- Launching the project "Clean Captive Installations for Industrial Clients in sub-Sahara Africa"
- Creating project ownership of all relevant stakeholders that attended the meeting
- Appointing Mr. Seth Mahu, Deputy Director for Renewable Energy Directorate at the Ministry of Energy to be member of the project's steering committee representing the Government of Ghana

The Ministry of Energy appreciates the direction the UN Environment Programme and Frankfurt School have taken towards supporting the clean captive installations for industrial clients in sub-Sahara Africa and in particular for selecting Ghana as one of the beneficiaries.

All stakeholders expressed their willingness and commitment to work closely with the UN Environment Programme and Frankfurt School to make this project a success in Ghana.

5. NEXT STEPS

All the stakeholders agreed that a coordinated, integrated and harmonised approach of the various institutions is crucial and well encouraged.

The project is expected to run from 2019 until 2023 and the below phases outlined will help bring the project to its completion.

- Baseline studies and awareness raising are to be conducted through country desk studies and scoping missions and data validation

- In the next phase following stakeholder consultations, streamlining the process will commence through development of necessary tools, identifying relevant & key partners, selection of replicable designs (best model); designing selection criteria for national showcase project

- Tools for assessment of financial and economic viability and definition of suitable financing structures of clean captive installations will be elaborated and disseminated with industrial and commercial actors; national and international financiers, and national public institutions

- Four viable and replicable pilot projects with industries, one in each participating country, will be selected, developed, structured, realized and monitored

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

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Visit the project website

www.captiverenewables-africa.org

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