PRESIDENTIAL INITIATIVE
ON CLIMATE CHANGE, RENEWABLE ENERGY & FOOD SECURITY

SIERRA LEONE
15.4 MW MOYAMBA HYDROPOWER PROJECT

PROJECT BACKGROUND

Context and history

Sierra Leone is endowed with substantial renewable energy resources, including hydropower, solar and biomass. However, less than 15% of Sierra Leone's total population has access to electricity, with the rate being only around 1% in rural areas, where power access is practically non-existent. The currently installed state-owned power generation capacity is inadequate to accommodate Sierra Leone's total power demand.

Indeed, Sierra Leone is currently experiencing a net deficit of power and is in desperate need of new power sources. At present, black outs and load shedding are quite common. Demand for electricity is increasing significantly, too, principally as a result of major mining developments, but also due to the need to power economic growth. An estimated 10% -20% annual increase in power demand is foreseen in the coming 10 years. With the large-scale development of mineral resources in Sierra Leone and mechanised agricultural activities, power demand will also increase more rapidly.

Meanwhile, to meet their basic needs the great majority of Sierra Leone's population is forced to rely on inefficient and polluting traditional fuels, such as kerosene for lighting and fuel-wood and charcoal for cooking. This inability to supply industry and population with its power needs creates a missed revenue generation opportunity for the government. The low electrification rate reflects factors including the country's limited transmission and distribution network and the high upfront cost of household connection and wiring.

Recognising this situation, in co-operation with international organisations, the Government of Sierra Leone has articulated several ambitious programmes to strengthen the power sector. The current generation capacity is to be multiplied, while a 225 kilovolt (kV) cross- border transmission line for the West African Power Pool (WAPP) and a nationwide transmission grid and distribution network are planned.

Project objectives

The 15.4 megawatt (MW) Moyamba small hydropower plant (SHPP) project is part of the government's plans to strengthen the power sector. The Moyamba plant will use the hydraulic

potential of the River Gbangba for power generation. The technical concept for the Moyamba SHPP project is a run-of-river, low-head scheme, using the water head of the reservoir created by a dam in the river for base load production. However, in addition, the storage capacity of the reservoir also creates the possibility of limited peak load production. All major civil works structures – such as the dam, spillway, intake and powerhouse – are concentrated in the area around the dam. Therefore, no river section will be affected by water diversion. The Moyamba SHPP is planned to be connected to the future national electrical grid of Sierra Leone.

By generating and supplying clean energy, the Moyamba SHPP will decrease the country´s reliance on fossil fuel-based power sources. As a result, it will also contribute to a reduction of the country's carbon footprint.

Access to modern energy and electricity from the project will also generate a positive impact on the community, significantly increasing social returns, such as improved education and access to reliable information. In addition, the project will create new employment opportunities and contribute to the socio-economic development of the region.

Contribution towards Sustainable Development Goals (SDGs)

The project contributes to the Sustainable Development Goals (SDGs). In particular, it contributes to SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), and SDG 13 (Climate Action).

1. PROJECT PROFILE

Project name	15.4 MW Moyamba hydropower project
Project location	River Gbangba, Sierra Leone
Technology	Hydropower, run-of-river
Project ownership	Public
Total capacity installed	15.4 MW
Total project cost	USD 104.3 million (United States dollars)
Type of funding requested	Debt and equity

2. PROJECT PROPONENT

Name of proponent	Electricity Generation and Transmission Company (EGTC)
Establishment year	1 January 2015
Country of the entity	Sierra Leone
Relevant project development record and team	The Electricity Generation and Transmission Company (EGTC) was created in 2011 through the Sierra Leone National Electricity Act and started operations on 1 January 2015. EGTC has an organogram with a governance structure that includes a

	highly trained, skilled and diverse team of professionals with extensive experience in their particular disciplines. EGTC's Hydropower Department is functional and headed by a directorate supervising the operations of all government-owned hydroelectric power plants in the country. EGTC has previously collaborated with the supervising Ministry of Energy in the implementation of projects related to generation and transmission.