

REFORESTATION PROJECT TO SUPPLY A BIOMASS POWER PLANT IN BAFATA, GUINEA-BISSAU

What is ARR and Energy Project

The projects goal is to produce **sustainable biomass** for **energy and electricity production** from forestry plantations in the rural area, including native species. The project has an enormous **social impact** by becoming a self-sufficient **electricity generating** nation and **sustainable supplier of biomass fuel** as well to **create** hundreds of **jobs** including; analysts, supervisors, technicians, engineers and specialists in different areas, from biomass, quality, control, electricity, among others.

The project has three components:

- Establishment of **forestry plantation** as the source of biomass. (ARR methodology VM0047 V1.0)
- Construction of a **biomass energy plant** to produce electricity (clean energy methodology ACM0018).
- Providing sustainable wood fuel for **clean cookstoves** to reduce GHG emissions



SOURCE: GEP, 2023

Project activities



Planting seedlings of **native trees** and **wood energy species**



Non-conventional renewable energy generation



Community involvement



SOURCE: GEP, 2023

How does this function?

The biomass will be produced by a forestry plantation, which will supply trees with high calorific capacity through sustainably harvesting to the forest plantation will also supply biomass to produce wood fuel for cookstoves.

The construction of the power plant and the cookstoves installation will be part of the same project using technologies that will produce clean electricity based on a renewable source of energy.



4,833,591* tCO2e
Emissions removals
Across the 30 year period

PROJECT AREA

12,318 Ha

**POTENTIAL ANNUAL
REMOVALS EMISSION**

161,120* tCO2e

**POTENTIAL JOBS
TO BE GENERATED**

ANALYSTS, SUPERVISORS, TECHNICIANS,
ENGINEERS AND SPECIALISTS IN DIFFERENT
AREAS, FROM BIOMASS, QUALITY, CONTROL,
ELECTRICITY, AMONG OTHERS.

Project lifetime and accounting period:

01 January 2025– 31 December 2054

30 year total period

Validation body: UNFCCC under article 6 of the Paris Agreement (Expected date, after 2027)

Sustainable development goals impacted



* **Disclaimer:** The ARR project's emissions removal potential is based on secondary information, which must be refined at the time of formulation of the project description with information obtained in the field.

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About Guinea Bissau and the project area

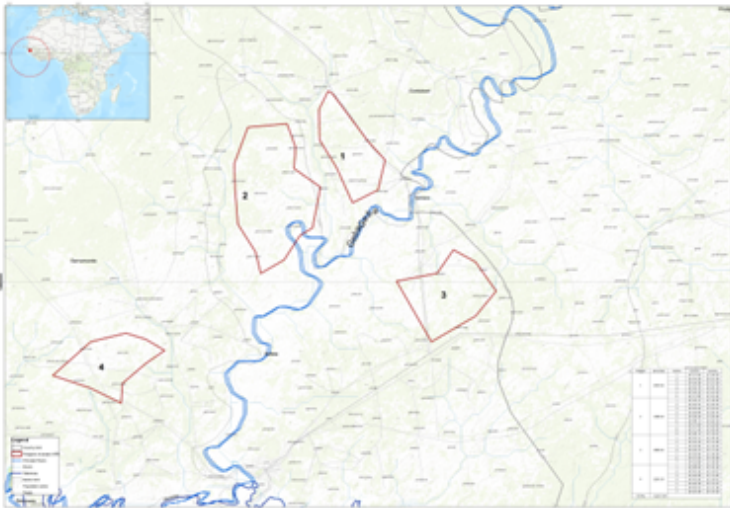
Guinea Bissau does not produce its own electricity. The country's electricity is generated by a foreign companies' boat located on the shore, that uses unsustainable heavy fossil fuels that the foreign entity charges the country with high price structures and difficult payment conditions that in some cases result in electricity cuts for the country.*

In the rural areas of the country where the electric network does not reach the majority of the territory, energy is produced with unplanned wood fuel harvested in an unsustainable manner.

Guinea Bissau is committed to shift to self-production of sustainable energy, which will supply up to 74** MW of electricity demanded by 2023.

* BBC (2023). Guinea-Bissau capital without power over unpaid bill to Turkey's Karpowership

** WB (2020). Guinea Bissau: Power Sector Policy Note



SOURCE: GEP, 2023

How will the project operate?

- The government will give a temporary concession, for up to 50 years, of 13,318 hectares to Green Economy Partnership to establish the forestry plantation.
- Green Economy Partnership will create a Special Purpose Vehicle (SPV) that will receive either equity or debt to finance the project, including blended finance for both the forestry plantation and the power plant.
- The Power Plant will sign a Long-Term offtake agreement, of 30 years, with Guinea Bissau Government to supply the country with clean electricity.
- Green Economy Partnership will deploy the forestry project involving the communities (tabancas) settled in the area.
- The SPV will sign an offtake agreement with the biomass energy plant for 30 years.
- The SPV will issue carbon credits which will be sold at the ITMOs market.
- The SPV will contract Campo Capital for forestry plantation implementation and carbon credit development.

What are the economics of the project?

- The total area of the project is 12,318 hectares, which will supply a biomass power plant of 20 MW.
- The revenue streams of the project are the biomass sold per cubic meter, the electricity sold and the generation carbon credits.
- The production of biomass is measured at an incremental annual rate. This is estimated at an average of 20 m³/ha/year, 246,000 m³/ha production in 30 years, totaling 7.4 million of M³ of biomass.
- A hectare cycle is up to 9 years. Each hectare can produce 180 m³ of biomass per cycle.
- In 30 years, the project is estimated to issue 4,833,591 carbon credits.
- The project requires an initial investment of USD 37M for the forestry plantation (USD 3K/ha) and USD 100M for the power plant (USD 5M/MW)

What tree species will be produced?

This project focuses on the reintroduction of key native and naturalized forest species, namely:

- *Acacia macrostachya* (20%)
- *Prosopis africana* (10%)
- *Eucalyptus pellita* (40%)
- *Pinus caribaea* (30%)

PROJECT PROPONENT AND MANAGMENT

