

A wide-angle photograph of a vast solar farm. The solar panels are arranged in neat, parallel rows, stretching towards the horizon. The background features rolling hills and mountains under a sky with a warm, orange and yellow sunset glow. The overall scene is peaceful and emphasizes renewable energy in a natural setting.

UPGRADE
ENERGY
AFRICA

13MWAC SOLAR PV TANZANIA

GUA & ISANGAWANA

PROJECT INFORMATION MEMORANDUM

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1 INTRODUCTION

This document serves as a comprehensive guide to Upgrade Energy, offering a detailed exploration of our financial and technical capabilities within the renewable energy sector. Furthermore, it provides a thorough financial and technical analysis of the proposed 13MWac solar PV project in Tanzania. This project is strategically divided across two locations. The following sections delve into the specifics of this exciting project and provide a clear picture of Upgrade Energy's expertise in developing and financing renewable energy initiatives. The project split is Gua Solar PV 5MWac and Isangawana Solar PV 8MWac making the overall size of this project 13MWac.

The realization of the Solar PV plants is managed by Upgrade Energy Africa (Pty) Limited. The proposed solar energy systems stand as an inclusive and sustainable solution for the generation of clean energy. Comprising photovoltaic (PV) panels, inverters, a ground mounting system, and a monitoring system, this configuration harnesses solar power efficiently. The ground mounting systems, will be in tracker configurations.

UEA is strategically positioned to ensure the seamless and efficient execution of the project. Our seasoned team is committed to upholding best practices, employing cost-effective methodologies, and guaranteeing the timely installation of the systems in adherence to mutually agreed-upon timelines.

With the Gua and Isangawana solar PV project, UEA aspires to contribute significantly to the overarching objective of sustainable energy generation, all while meeting the distinctive requirements of Tanzania Electric Supply Company Limited (TANESCO). In tandem, our collaborative efforts aim for excellence, reliability, and a future marked by environmental conscientiousness.



2 FINANCIAL OVERVIEW

2.1 DEBT FINANCING

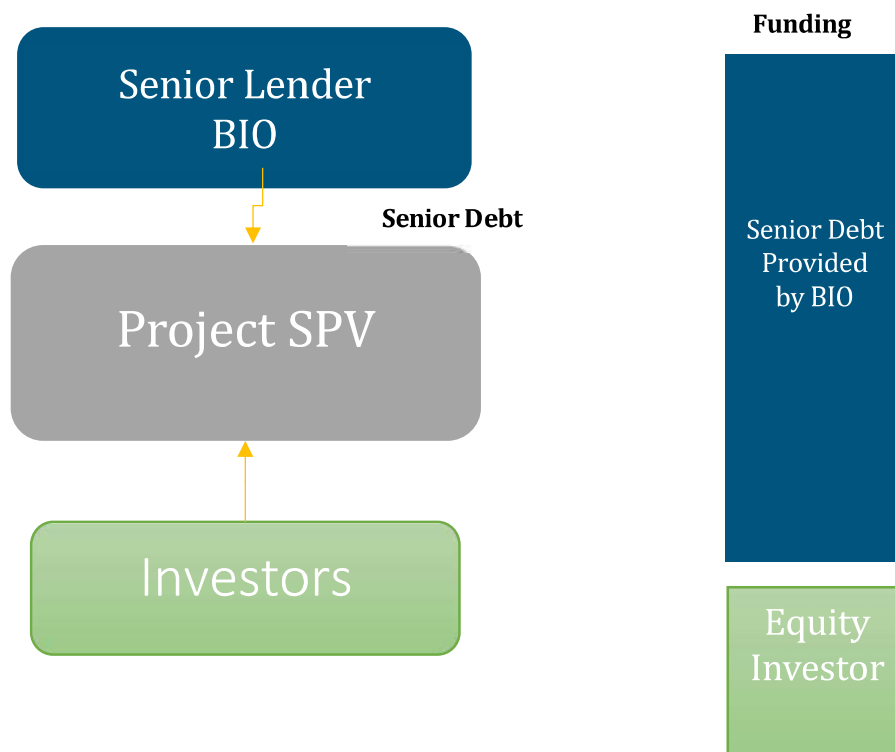
Debt Financing: For the Gua and Isanganwana solar PV projects in South Africa, we have secured an agreed term sheet for senior debt financing with BIO, the Belgian Investment Company for Developing Countries. This agreement demonstrates our ability to attract favourable debt financing from reputable international DFIs. Please find the term sheet below.



Financial Capability and Commitment

Upgrade Energy's extensive experience in international fundraising, coupled with our strong relationships with leading financial institutions, underscores our financial capability and commitment to developing and financing renewable energy projects across the globe. We are confident in our ability to secure the necessary funding to support the continued growth of our project portfolio and contribute to a sustainable energy future.

2.2 FINANCING STRUCTURE FOR GUA & ISANGAWANA



This table provides a detailed breakdown of the capex costs associated with the Gua & Isangawana Solar Project. This table emphasizes the relative contribution of each cost component.

Total CAPEX to be financed

	USD '000
<i>EPC Costs</i>	8,981
<i>past Development costs</i>	400
<i>Land & Origination costs</i>	1,300
<i>Insurance Cost During Construction</i>	55
<i>Contingency</i>	561
<i>Other professional fees</i>	430
<i>Upfront, Commitment & Monitoring Fees</i>	202
<i>Working Capital</i>	150
<i>Debt Service Reserve Account</i>	716
<i>Interest During Construction</i>	270
Total	13,066

Sources of funds

	USD '000
<i>Debt</i>	10,000
<i>Equity</i>	3,066
Total	13,066

2.3 DEBT TERMS

Debt terms

Debt Portion	Up to 80% (max \$10M)
Tenure	17 years door-to-door
Minimum DSCR	1.2x
Interest Rate	SOFR + 3.5-5%
Model Yield Assumption	P90

The terms used are based on the term sheet that Upgrade received from the Belgian investment company for developing countries (BIO). It is structured to provide long-term funding for the project's construction and initial operations. Here's a breakdown of the key terms:

- Size: USD 10 Million - The loan amount represents 80% of the project's total Capital Expenditure (Capex). This size and debt-to-equity ratio is reflected in term sheets upgrade received from interested debt funders.
- Tenure: 17 Years door to door - The loan repayment period is set at 17 years from the start of the loan this means that the loan will be repaid 16 years after COD. This timeframe allows for the

project to generate sufficient revenue to comfortably service the debt over its lifecycle. The 18-year tenure aligns with 90% of the Power purchase agreement length with the offtakers, allowing for complete debt repayment before the end of the PPA. And 2 years of debt free operation on the project's life span.

- Minimum Debt Service Coverage Ratio (DSCR): 1.2 - The DSCR is a financial metric that measures a project's ability to generate enough cash flow to cover its annual debt obligations (interest and principal payments). A minimum DSCR of 1.2 indicates that the project is expected to generate a cash flow 20% greater than the annual debt service requirement. This provides a buffer for potential fluctuations in revenue or operating expenses and assures lenders of the project's capacity to meet its debt obligations.
- Interest Rate: SOFR + 3.5 5% - The interest rate on the loan is linked to the SOFR term rate, which is a benchmark rate for international borrowing. The model uses the conservative rate of a spread of 5% that is added to rate, resulting in a interest rate that reflects prevailing market conditions. The rate will be fixed for the term of the tenure. The margin used in the model is conservative and a lower margin might be obtained at financial close.
- Model Yield Assumption: the model uses a conservative forecast of production of the P90 of the Yield analysis.

Key Points to Consider:

- The 80% debt-to-equity ratio reflects a balance between leveraging debt financing for project construction while maintaining a significant equity investment from the project developers.
- The floating interest rate based on SOFR + 5% offers conservative view.
- The minimum DSCR of 1.2 provides comfort to lenders by demonstrating the project's ability to comfortably service its debt throughout the loan term
- Conservative revenue assumptions.

2.4 BIO TERM SHEET



To:

Dennis Nderitu, Managing Partner
Aegis Brentwood LLP
P.O. Box 4402, #112 Rangers Court, South C, Nairobi 00506, Kenya

20/08/2023
By e-mail

Subject: Expression of Interest on behalf of the Belgian Investment Company for Developing Countries ("BIO") (the "Letter")

Dear Sir,

We are writing in connection with the Information Memorandum, the Financial Model, other draft project documents and previous discussions related to the two greenfield solar PV projects, Upgrade Energy is currently developing in Tanzania, respectively the Gua 5 MW project, located in the Songwe District, and the Isangawana 8 MW, located in the Mbeya Region (the "Project") and regarding which you have invited us to express an interest in investigating a potential financing in the form of a credit facility (the "Investment").

After reviewing the preliminary information you made available to us with regard to the Project, we can confirm that the Project is within the country and sector focus of the Belgian Investment Company for Developing Countries ("BIO"). We understand that you are currently seeking long-term debt financing and are pleased to express BIO's interest in considering long-term senior debt financing arrangements and to further analyzing a potential financing of the Project with you.

BIO is a company limited by shares (*société anonyme/naamloze vennootschap*), incorporated in 2001 and owned by the Belgian State. BIO's mission is to support a strong private sector in developing and/or emerging countries, to enable them to gain access to growth and sustainable development with the aim of achieving the Sustainable Development Goals. BIO has been successfully supporting several infrastructure projects in the energy sector involving local and international sponsors in Asia, Latin America and sub-Saharan Africa over the past few years.

At this stage you will appreciate that we have not yet carried out any due diligence, obtained any internal approvals or discussed any documentation in relation to this transaction and are not able to provide detailed proposed terms for any financing for the Project. From our preliminary appraisal of the information you have made available so far, we can consider the following indicative terms that we think could apply to the financing of the Project:

Facility:	Senior secured debt financing.
Amount:	Max USD 10 million in total for the 2 projects.
Borrower:	An SPV to be set up and owned by Upgrade Energy.



Tenor and repayment profile:	Maximum 15-years door-to-door tenor. Debt repayment profile sculpted in line with cash flow projections to achieve an annual DSCR of 1.20x based on a P90 production profile.
Grace Period:	Reflecting the construction period of the Project + buffer.
DSRA:	Min. 6 month-Debt Service Reserve Account
MMRA:	To be determined (subject to the opinion of the lender's technical advisor ("LTA")).
Interest Rate:	A fixed rate equal to the swap rate (IRS) of the same tenor and repayment profile corresponding to the Term: $Sofr + \text{margin}$ (350-500) bps, aligned with the market and subject to the: due diligence, final financial structure, PPA tariff and outcome of the negotiation of the security package.
Fees:	<ul style="list-style-type: none"> Uplift fee 1.5% of Facility Amount, Commitment fee 1.00% of undrawn and uncanceled Facility Amount; Other fees' amount to be determined in due course (a.o.: monitoring fee, waiver, fee prepayment fee, cancellation fee).
Appraisal fee:	Appraisal fee USD 20,000.
Covenants:	Min DSCR for debt sizing 1.20x (P90 scenario); Dividend blocker 1.15x; Event of default 1.10x.
Debt/Equity ratio:	Maximum gearing 80:20; equity to be fully funded upfront.
Security:	1 st ranking security package customary for this type of project finance transactions <i>pari passu</i> with other senior lenders, if any; including a security over all assets (contracts, future revenues, accounts, land, etc.) and a security over the shares held by the sponsors in the borrowing special purpose vehicle.
Sponsor's support:	Sponsor's support up to [X%] (subject to due diligence and LTA's opinion) of Project costs to fund any cost overrun until Project's completion date. Share retention will be assessed in due course.



- Final Approval granted by the BIO Board of Directors based on a satisfactory analysis of the findings of the technical, commercial, legal, insurance, environmental and social due diligence and allowing BIO to start the legal documentation phase.

Insurance, environmental & social, technical & legal aspects will need to be examined and/or validated by independent external consultants (whose appointment and scope of work is to be coordinated amongst Lenders) and the costs thereof are to be borne by the Borrower.

BIO adheres to a set of environmental and social principles and considerations which are reflected throughout the investment process, including in the due diligence, contracting and monitoring phases. For more information on BIO's ERS commitments and how these are translated into the investment policy, please see BIO's environmental and social policy and other information available on BIO's website (<https://www.bio-invest.be/en/es-strategy-policy>).

This Letter does not constitute an offer or commitment by BIO to further investigate and discuss a potential financing. This Letter is neither an offer nor a commitment by BIO to provide any financing. Any financing that may be offered by BIO in due course is conditional on a number of processes and matters, including: the satisfactory outcome of due diligence in respect of the Project, the Company and its stakeholders; completion of customer identification procedures; internal approvals by the competent corporate bodies of BIO, negotiation and execution of satisfactory legal documentation and satisfaction of conditions precedent included therein.

We look forward to having further discussions with you on this Project and please, do not hesitate to contact us should you have any further questions.

Yours faithfully,

Belgian Investment Company for Developing Countries NV/SA

Maxime Pirson
Digitally signed by Maxime Pirson
Date: 2024.08.20 16:59:09 +02'00'

By: Senior Investment Officer

Marie Watelet
Digitally signed by Marie Watelet
Date: 2024.08.20 17:33:47 +02'00'

By: Manager of Infrastructure

BIO's approval process is conducted in a 2-step approach:

- Clearance in principle is based on a satisfactory preliminary assessment of the then available: project information and documentation, investment and financing plan, KYC information, draft term sheet and financial model, and allows BIO to enter into detailed due diligence, which includes a site visit and meetings with the relevant stakeholders.

2.5 OPERATIONAL PHASE

2.5.1 REVENUE

The Gua & Isangawana Solar Project's revenue stream is designed to be stable and predictable. The project has secured a 20 year offtake agreement with Tanesco, the energy provider of Tanzania.

The agreed-upon tariff for the electricity is \$ 70 per Megawatt-hour (MWh). This tariff comes into effect upon Commercial Operation Date (COD), expected Q4 2025. The tariff will stay fixed for the duration of the agreement at \$70 and will not increase with CPI, hence the high starting tariff.

2.5.2 OPERATIONAL COSTS

Operational costs in Year 1

	USD '000
<i>Maintenance cost, monitoring & security</i>	97
<i>Land Lease</i>	14
<i>Management & accounting & admin & audit fees</i>	62
<i>Banking monitoring fees</i>	52
<i>Insurance Costs</i>	91
<i>Total Opex</i>	316

Maintenance Cost: Maintenance costs for at the solar farm include both scheduled and unscheduled maintenance. Scheduled maintenance involves regular inspections, servicing, and minor component replacements to ensure the panels operate efficiently. Unscheduled maintenance covers repairs and replacements due to unexpected failures or breakdowns. Additionally, costs are incurred for spare parts and consumables such as lubricants, filters, and bolts. Labor costs also form a significant part of maintenance expenses, including salaries for on-site and off-site maintenance personnel, such as technicians and engineers.

Monitoring & Security: Monitoring and security costs encompass both remote monitoring and on-site security. Remote monitoring involves expenses for software and hardware necessary to continuously monitor Panel performance and detect any issues promptly. On-site security includes costs for security personnel and surveillance systems to protect the Solar farm from theft, vandalism, and other security threats. These measures are essential to ensure the smooth and uninterrupted operation of the Solar farm.

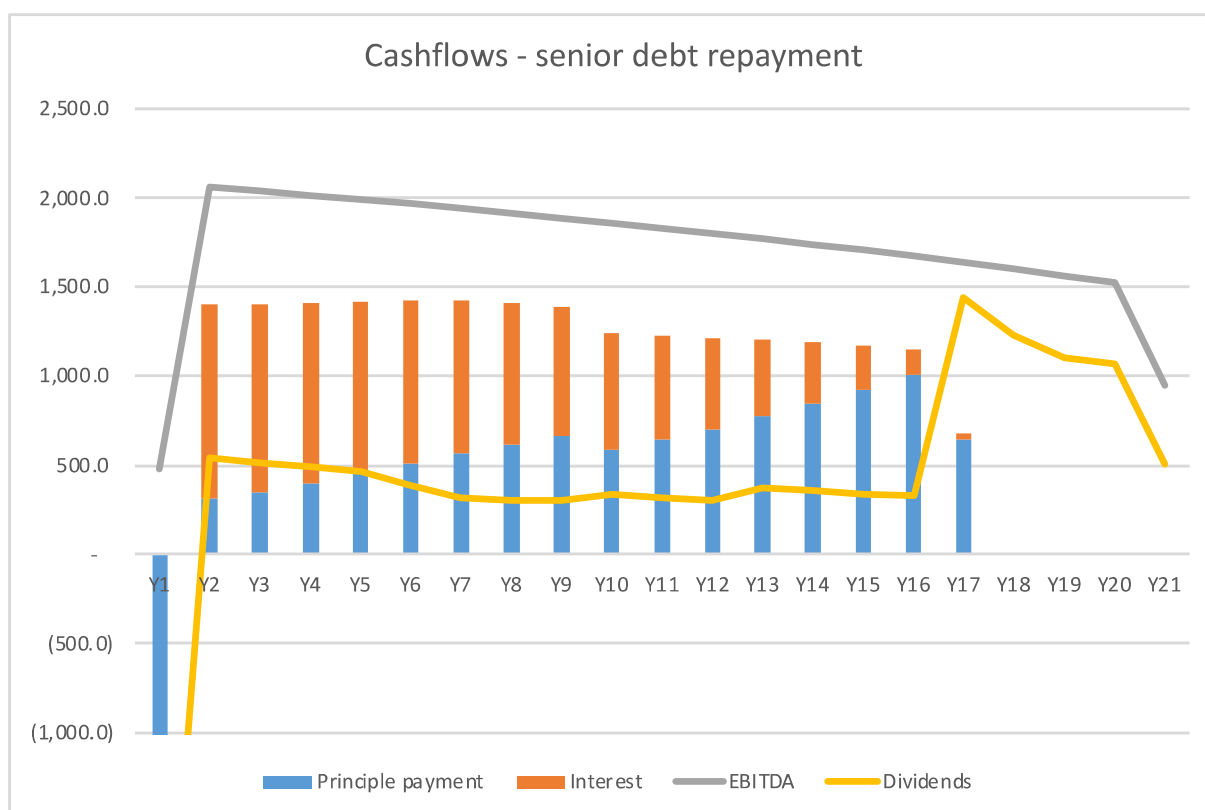
Land Lease: Land lease costs consist of regular payments made to landowners for the use of the land on which the Solar farm is situated. These payments can be structured as a fixed annual fee or as a percentage of the revenue generated by the Solar farm. The lease agreements are crucial to securing the necessary land for the Solar farm's infrastructure and operations.

Management, Accounting, Admin & Audit Fees: This category includes various overhead costs essential for the Solar farm's administration. Management fees cover the expenses of overall operations management. Accounting fees involve costs for professional accounting services to maintain financial records and ensure regulatory compliance. Administrative costs encompass office supplies, clerical support, and other day-to-day operational expenses. Audit fees are payments made for external audits to verify financial accuracy and compliance with statutory requirements.

Banking Monitoring Fees: Banking monitoring fees include charges by financial institutions to monitor and manage loans and other financial agreements associated with the Solar farm. These fees also cover transaction costs related to banking services, including loan disbursements, repayments, and other financial transactions necessary for the project's financial management.

Insurance Costs: Insurance costs for a Solar farm cover various risks associated with its operations. Property insurance provides coverage for physical assets against damage or loss due to incidents like natural disasters or accidents. Liability insurance protects against claims for accidents or injuries that might occur on or around the Solar farm. Business interruption insurance covers lost income due to unforeseen disruptions in operations, ensuring financial stability despite unexpected events.

2.6 CASHFLOWS



EBITDA and Revenue Growth:

A steady increase in annual EBITDA, mirroring the rise in revenue. This is primarily driven by the anticipated increase in electricity tariffs based on the Consumer Price Index (CPI). As the price of electricity goes up, so does the Solar farm's revenue, positively impacting EBITDA.

In year 17 the debt will be completely repaid, at that point the debt service reserve account will be released. Hence the high increase in dividend in that year.

Debt Repayment Plan:

The sculpted debt repayment plan designed to maintain a minimum Debt Service Coverage Ratio (DSCR) of 1.2X throughout the loan term.

That debt repayments will increase annually, due to rising interest rates and more available free cash flow to financiers (FCFF) within the allowed DSCR in order to repay more of the debt as revenue increases. As the principal amount of the loan is gradually paid down, the interest paid will decrease. As such a larger portion of each debt repayment will go towards reducing the principal balance, accelerating debt payoff. The entire debt is expected to be fully repaid by year 17 of the project.

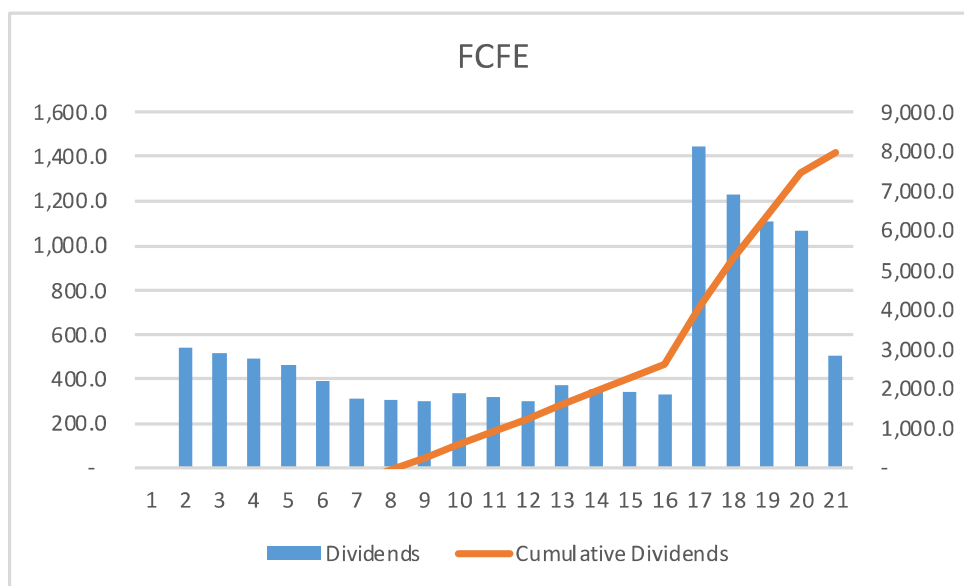
2.7 EQUITY RETURNS OVERVIEW

The following graphs provide a detailed illustration of the specific equity cashflows for each phase of the project.

2.7.1 DIVIDEND DISTRIBUTION OVER THE PROJECT LIFESPAN

The second graph focuses on the dividend distributions to equity investors over the entire lifespan of the project. Initially, during the early operational years, the dividends are modest as the project prioritizes debt servicing and operational stability. As the project generates steady cash flows and begins repaying its debt, the available free cash increases, allowing for gradual increases in dividend payouts to the investors.

A significant milestone occurs in year 18, when the debt is fully repaid. This debt retirement substantially enhances the project’s cash flow position, enabling a marked increase in dividend distributions. From this point onwards, equity investors benefit from higher and more consistent dividends, reflecting the project’s mature stage with reduced financial obligations.



The graph also presents the cumulative dividends for equity investors over the entire duration of the project. It tracks the aggregate inflow and outflow of funds, showing a total cash receipt of approximately \$ 8 million. This cumulative perspective provides a clear picture of the total financial return to equity investors, factoring in all phases from initial investment through ongoing operations to final payouts.

2.8 CONCLUSION

The detailed cashflow analysis reveals that the project achieves an Internal Rate of Return (IRR) of 14.6%, which aligns well with the expected return rates for similar Solar farm projects in the South African market.

Overall, this comprehensive financial analysis provides a robust framework for understanding the financial dynamics and viability of the project, highlighting the expected returns, timing of cash inflows and outflows, and the financial milestones that equity investors can anticipate throughout the project lifecycle.

Returns overview

Fixed tariff	\$ 70 / MWh
PPA term	20 years
Debt term	17 years
Min DSCR	1.2X
Investor IRR	14.6%
Payback period	6 years

3 ECONOMIC ANALYSIS

The techno-economic viability of the projects, has been thoroughly assessed, considering various project costs and operating parameters. The key observations are summarized as follows:

Meeting Growth of Power Demand

This project is poised to address the escalating demand for power within the Songwe district, characterized by low voltage issues. By enhancing voltage levels, it will not only cater to the burgeoning power demand but also significantly improve the quality and reliability of power supply in the region.

Job Creation

The implementation of this project will serve as a catalyst for employment generation, offering opportunities for both skilled and unskilled Tanzanians during both the construction and operational phases. Furthermore, it will stimulate job creation across diverse economic sectors such as mining, agriculture, and commercial enterprises. This aligns seamlessly with the development objectives set for 2025, focusing on poverty alleviation and the augmentation of employment opportunities.

Contribution to Economic Growth

The project's impact extends beyond power provision; it is poised to catalyze the development of the mining sector within the Songwe district by ensuring the delivery of quality power. Consequently, it will create an enabling environment for the growth of other sectors, fostering economic prosperity not only within the district but also on a national scale.

In essence, the Solar Power Project stands as a pivotal driver of economic growth, poised to address power demands, spur job creation, and propel the overall development trajectory of the Songwe District and Tanzania as a whole.

4 GUA SOLAR PV – LOCATION ONE

4.1 PROJECT DESCRIPTION

The Gua Solar PV MWdc is a project which is coming out of Tanzania in the Songwe District. The project aims at improving energy generation needs in Songwe District and more importantly, the aspirations within the Ministry of Energy (MoE) and TANESCO in achieving goals of providing cost effective and reliable power generation and distribution within the country.

Gua Solar PV Project	
Main characteristics	
Location	Songwe, Tanzania
Rated power (AC)	5 MWac
Peak power (DC)	6 MWdc
Ratio DC/AC	1.2
Civil characteristics	
Suitable plot area	30 Acre
Ground coverage ratio (GCR)	44.00 %
Structure type	One-axis tracker
Pitch distance	10 m
Electrical characteristics	
PV Modules (650 Wp)	9,464
Number of inverters (300.0 kWac)	17

The proposed 5MWac solar plant by Upgrade Energy is expected to generate an estimated annual electricity output of 1,429.014 MWh/yr. This significant energy yield has been verified through the PVsyst - Simulation report generated by Upgrade Energy.

We will maximize the current network's capacity without the need for substantial upgrades. Simultaneously, Upgrade Energy will be diligently developing the essential grid connection enhancements to facilitate the second phase.

To maximize energy production, Upgrade Energy intends to utilize bifacial PV modules mounted on single-axis horizontal trackers. This advanced technology, combined with favourable weather conditions, ensures optimal solar energy capture and enhances overall plant performance.

The PV facility will consist of arrays of PV panels and respective inverter stations, supported by appropriate mounting structures. Cabling between project components will be laid underground where practical, ensuring a neat and efficient setup. An on-site substation, including a dedicated control and storage building, will be constructed to manage the power generated by the plant. Adequate laydown areas, both permanent and temporary for the construction phase, will be provided for efficient project operations. Internal access roads and fencing will be implemented to ensure site security and accessibility.