GUA SOLAR PV 5MWac
IN SONGWE DISTRICT
PROJECT INFORMATION MEMORANDUM

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1 GUA SOLAR PV

1.1 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.

Although the solar site situated in Songwe District, Songwe Region, power will be evacuated into the 33kV distribution network that feeds from Mbeya. Power will be injected into a 100mm2 “Dog” ACSR power line and the solar facility is 210km away from Mwakibete 220/33kV substation. The existing line loading varies between 5.5-6.5MW with significant loads at Shanta mining and Mkwajuni villages.

1.1.1 SITE LOCATION

Upgrade Energy Africa has identified 30 acres of land located in the Gua-Songwe District within the Songwe Region of Tanzania. Situated approximately 95 km northwest of Mkwajuni town, the proposed site is adjacent to the Gua town center. Materials for the solar project construction will be transported from Gua village, with access to the project site via a 130 km path road from Chunya town. The site's strategic location near key infrastructure and services will enable efficient project development and operations.

The PV Plant location has the characteristics shown in table below.

PV Plant location characteristics	
City / Town	Gua
District	Songwe
Country	Tanzania
Latitude	-9.01 °S
Longitude	+32.80 °E
Altitude	1,468 m
Time zone	UTC +3

The project location is shown in the figure below.

1.1.2 LAND OWNERSHIP

The project developer and Gua village government have initially agreed on 30 acres for the establishment of solar farm. The principal agreement is that the project proponent will contribute development activities in the village and provide Corporate Social Responsibilities.

1.1.3 PROJECT ACCESSIBILITY

The proposed project site will be accessed via the path road with length of 130km from Chunya town.

1.1.4 ADJACENT LAND USES.

The adjacent land uses include settlement (residential housings), farmlands and road infrastructure. The site is also located approximately 30km from Lukwate Game reserve.

1.1.5 EXISTING CONDITION OF THE SITE

The site is covered by grasses, dense vegetation and shrubs. Some partial human activities such as grazing of domestic animals (cows, goats and ship) are also taking place at the project site. The site has all necessary infrastructure at the vicinity, these includes electricity, water supply, communication towers and feeder roads. In order not to deplete the environmental integrity at the project site, construction works will start after EIA certificate has been issued.

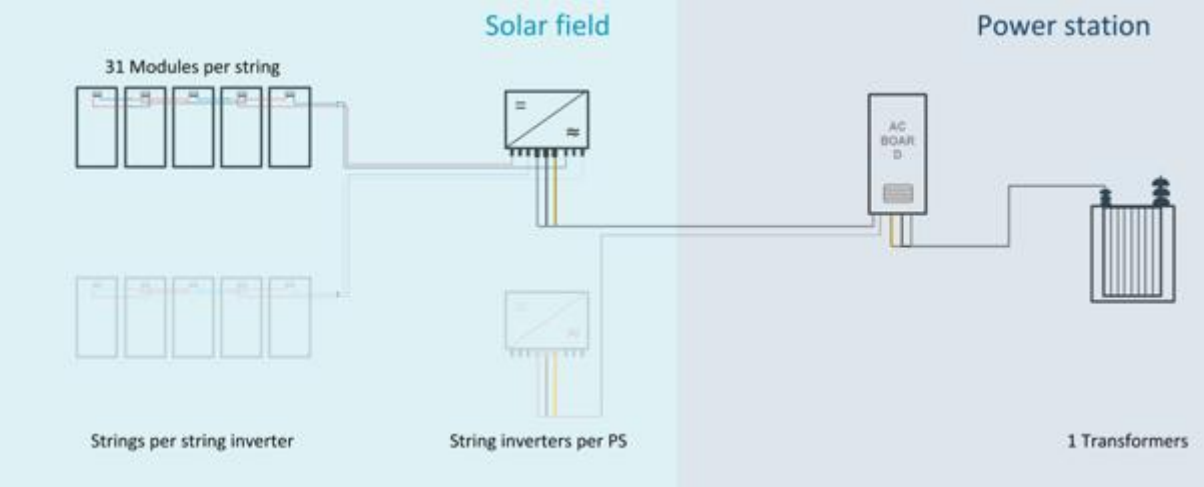
1.2 TECHNOLOGY & MAIN EQUIPMENT

The proposed PV plant will feature a single axis tracking system, bifacial PV modules, and a string inverter layout. Infield power stations will step up the voltage, ensuring synchronization with the existing grid connection.

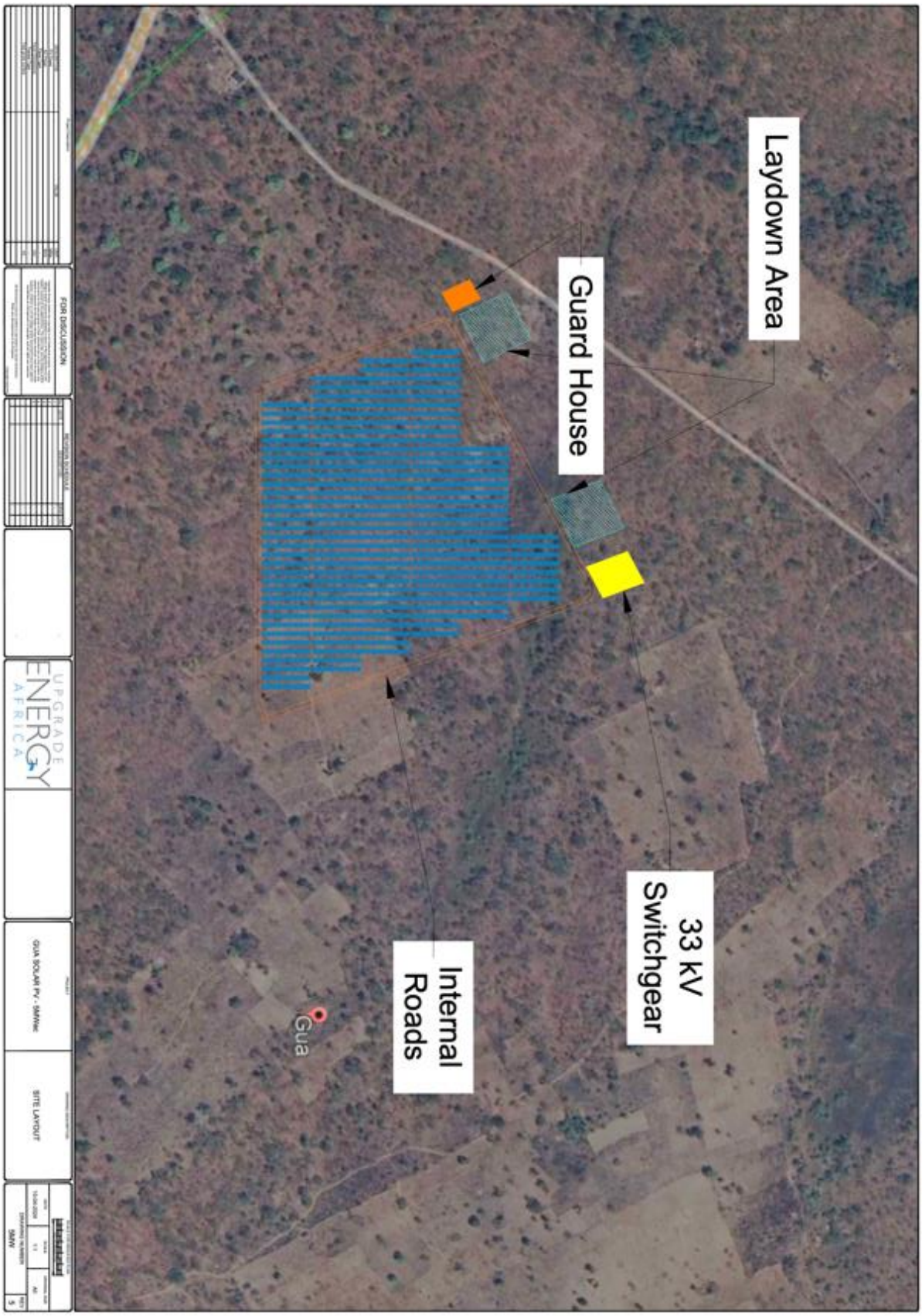
The main equipment used to convert the solar energy to electricity is:

- Photovoltaic modules, which convert the solar radiation into direct current.
- The single-axis tracker, which supports and orients the PV modules to minimize the angle of incidence between the incoming sun rays and the PV modules surface during the day.
- String inverters, which convert DC from solar field to AC.
- Power Transformers, which raise the voltage level from low to medium.
- Power Stations, which hold the necessary equipment to convert the DC power to AC.

The electrical configuration of the PV plant can be seen in the figure below.

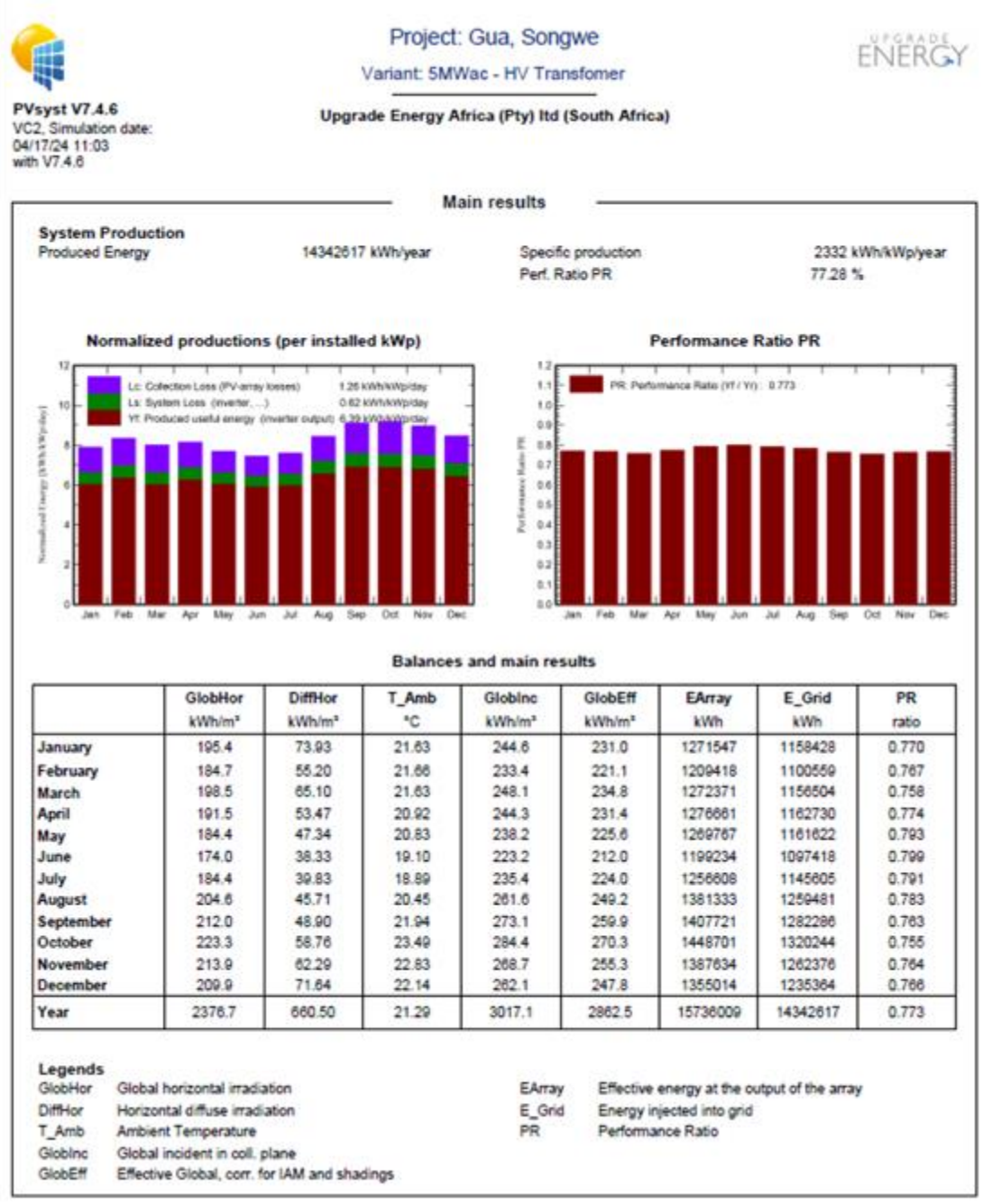


1.3 SITE LAYOUT



1.4 ENERGY YIELD

UEA calculated the yearly yield of a bifacial panel installed at 2,2332 kWh/kWp using the Meternom 8.1 database. This indicates that the 6 MWdc/5 MWac solar farm has an annual production capacity of about 14 GWh. In order to align the panels with the position of the sun and enhance energy output, the solar farm will furthermore employ horizontal single axis trackers. Upgrade has included a 4% yield buffer in their financial model.



PVsyst V7.4.6
VC2, Simulation date:
04/17/24 11:03
with V7.4.6

Project: Gua, Songwe
Variant: 5MWac - HV Transfomer
Upgrade Energy Africa (Pty) ltd (South Africa)

Main results

System Production
Produced Energy 14342617 kWh/year
Specific production 2332 kWh/kWp/year
Perf. Ratio PR 77.28 %

Normalized productions (per installed kWp)

Performance Ratio PR

Balances and main results

	GlobHor kWh/m²	DiffHor kWh/m²	T_Amb °C	GlobInc kWh/m²	GlobEff kWh/m²	EArray kWh	E_Grid kWh	PR ratio
January	195.4	73.93	21.63	244.6	231.0	1271547	1158428	0.770
February	184.7	55.20	21.66	233.4	221.1	1209418	1100559	0.767
March	198.5	65.10	21.63	248.1	234.8	1272371	1156504	0.758
April	191.5	53.47	20.92	244.3	231.4	1276661	1162730	0.774
May	184.4	47.34	20.83	238.2	225.6	1269767	1161622	0.793
June	174.0	38.33	19.10	223.2	212.0	1199234	1097418	0.799
July	184.4	39.83	18.89	235.4	224.0	1256608	1145605	0.791
August	204.6	45.71	20.45	261.6	249.2	1381333	1259481	0.783
September	212.0	48.90	21.94	273.1	259.9	1407721	1282286	0.763
October	223.3	58.76	23.49	284.4	270.3	1448701	1320244	0.755
November	213.9	62.29	22.83	268.7	255.3	1387634	1262376	0.764
December	209.9	71.64	22.14	262.1	247.8	1355014	1235364	0.766
Year	2376.7	660.50	21.29	3017.1	2862.5	15736009	14342617	0.773

Legends

GlobHor	Global horizontal irradiation	EArray	Effective energy at the output of the array
DiffHor	Horizontal diffuse irradiation	E_Grid	Energy injected into grid
T_Amb	Ambient Temperature	PR	Performance Ratio
GlobInc	Global incident in coll. plane		
GlobEff	Effective Global, corr. for IAM and shadings		

1.5 GRID CONNECTION

The Gua Solar PV 5MWac project aims to export 5MW of power under normal operating conditions. This will be achieved through grid connections at the 33kV voltage level, the solar power will be injected to the existing 33kV Distribution line which is approx. 200m away parallel to the proposed solar project. The solar PV-generated power will

undergo conversion to 800V AC using a Power Conditioning Unit (PCU). Subsequently, it will be stepped up to 33kV voltage level via an Inverter Duty Transformer rated at 800V/33kV, integrating it with the existing distribution infrastructure.

Essential components such as Current Transformers (CTs), Potential Transformers (PTs), isolators, lightning arrestors, and Automatic Bus Transfer (ABT) systems for energy measurement will be carefully arranged. The switchyard configuration and other specifications will adhere to relevant standards. Furthermore, protection, metering, and control panels necessary for the switchyard and grid feeder will be housed within the plant's switchyard.

A dedicated ABT meter will be installed either within the plant's control building or as per specific utility requirements. This meter will include both main and checking arrangements, subject to mutual agreement with the utility. Tariff meters will accurately record both import and export parameters.

1.6 OFF TAKER: TANZANIA ELECTRIC SUPPLY COMPANY LIMITED (TANESCO)

Tanzania Electric Supply Company Limited (TANESCO) is the state-owned entity tasked with the generation, transmission, and distribution of electricity in Tanzania. TANESCO plays a pivotal role in enhancing governance, performance, financial sustainability, and the commercial viability of the power sector, as well as ensuring the delivery of electricity services across the nation. Additionally, in the context of solar project development, TANESCO is responsible for procuring all electricity generated by the project at an agreed-upon tariff.

In May 2022, Tanzania Electric Company (TANESCO) conducted an assessment of the project and recognized the strategic significance of the areas, leading to Infinite Power Resources receiving a Letter of Intent with the site reference number: GUA/SOLAR/SPP/2022/99.

Following the submission of feasibility studies to TANESCO for review, which were subsequently accepted, the parties proceeded with the signing of the Solar Power Purchase Agreement (SPPA). The SPPA was then submitted to the regulator, the Energy and Water Utilities Regulatory Authority (EWURA), and received approval in March 2023. Subsequently, we received a letter requesting the completion of the Interconnection and Sale Agreement application form, along with a draft PPA, for initialing and signing as applicable, which was then returned to TANESCO for counter-signing.

On November 22nd, 2023, TANESCO officially counter-signed the PPA, granting Infinite the mandate to design, build, and operate two Solar Power Projects for a contractual lifespan of 20 years. The electricity generated by these projects will be sold to TANESCO at a rate of USc.7/kWh.

2 SONGWE DISTRICT PROFILE

Geographical Location

Songwe district is situated at Latitude 9.69° S and Longitude 31.66° E in the South Zone of Tanzania, with an elevation of 1281 meters.

Administration

Administratively, Songwe district comprises 2 divisions and 18 wards: Chang'ombe, Galula, Gua, Ifwenkenya, Kanga, Kapalala, Magamba, Manda, Mbangala, Mbuyuni, Mkwajuni, Mpona, Mwambani, Namkukwe, Ngwala, Saza, Totowe, and Udinde.

Demography

Songwe District is one of the six districts in the Songwe Region of Tanzania. It shares borders with the Sikonge District to the north, the Chunya district to the east, and the Katavi Region to the south and west. The district headquarters are located at Mkwajuni. According to the 2012 Census, Songwe District has a population of 1,333,692.

Economic Status

The primary occupations of Songwe district residents are agriculture and livestock keeping, with additional activities including beekeeping, petty business, and mining. The district's GDP is estimated at Tshs 1.88 billion.

Market

Agricultural produce such as tobacco and cotton are marketed through formal channels using primary cooperatives, while other crops like sunflower, sesame, groundnuts, yellow gram, and honey are marketed informally. Livestock, including cattle, goats, and sheep, are sold through 19 primary livestock markets scattered throughout the district.

Climatic Parameters

According to the District Agricultural Development Plan, Songwe District experiences the following climatic parameters:

- Rainfall: Songwe district has a unimodal rainfall regime concentrated from November to April. The long-term mean annual rainfall is 703 mm with a standard deviation of 189 mm.

- Temperature: The annual mean, maximum, and minimum monthly mean daily temperatures are 28.0 °C, 29.4 °C (November), and 16.3 °C (July), respectively.

- Relative Humidity: The annual mean, maximum, and minimum monthly mean daily relative humidities are 80.6%, 86.0% (February), and 73.4% (July), respectively.

- Pan Evaporation: The maximum and minimum monthly mean daily pan evaporation are 6.8 mm/day (November) and 5.8 mm/day (January), respectively.

- Sunshine Hours: The average annual daily sunshine hours are 8.9 hr/day. The maximum and minimum monthly mean daily sunshine hours are 10.2 hr/day (September) and 8.5 hr/day (January), respectively.

- Wind Run: The average annual daily wind run is 99 km/day (1.3 m/s), with the wind season exceeding 110 km/day (1.4 m/sec) extending from August to December.

Based on the above analysis, the proposed site is deemed feasible for the installation of the solar power project.

3 STUDIES & REGULATORY APPROVALS

3.1 OVERVIEW

All necessary regulatory approvals have either been finalized or are in the final stages of completion.

3.2 PROJECT STATUS

Activity ID	ACTIVITY DESCRIPTION	Status
Stage 0		
1	**LAND AGREEMENTS**	
1.1	Option to Lease Agreement	Completed
2	**ENVIRONMENTAL**	
2.1	ESIA Report	Completed
3	**POWER EVACUATION**	
3.1	Grid Impact Assessment	Completed
Stage 1 (1st stage of Turn Key Development)		
1	**LAND AGREEMENTS**	
1.1	Land Lease Agreement	Completed
2	**ENVIRONMENTAL**	
2.1	Original Environmental Authorisation (EA) for the facility	Completed
3	**OTHER KEY PERMITS**	
3.1	Civil Aviation Authority (CAA) Consent	N/A
3.2	Wayleave	Outstanding
3.3	Service and Operating Agreement	Outstanding
3.4	Road access approval	Outstanding
4	**TECHNICAL STUDIES**	
4.1	Geotechnical Studies	Outstanding
5	**POWER EVACUATION**	
5.1	Transmission Connection Agreement	Outstanding
5.2	Prelim Design	Completed
5.3	Detailed Design Approval	Outstanding
Stage 2 (Ready to build)		

1	**LAND AGREEMENTS**	
1.1	Exercise Option Agreement by signing Lease Agreement	Outstanding
2	**LAND USE CONSENTS**	
2.1	Rezoning in terms of the Spatial Planning and Land Use Management Act (SPLUMA)	Not required (part of ELIDZ)
3	**ENVIRONMENTAL**	
3.1	EMA Certificate	Complete needs renewal
4	**TECHNICAL STUDIES**	
4.1	Topographical Studies	Completed
4.2	Geotechnical Studies	Outstanding
4.3	Hydrological Studies	Outstanding
4.4	Resistivity analysis	Outstanding
5	**CONSTRUCTION PERMITS**	
5.1	Preparation of Building Plans and Submission to Council for Approval	Outstanding
5.2	Other Construction Permits	Outstanding

3.3 TIMELINES

The construction will take approximately 9-10 months. Upgrade Energy aims to start delivering energy from Q3 2025. This allows for enough time to finalise the financial close by September 2024.

It may be possible to accelerate the various timelines of this project and start bringing generation online within a shorter timespan than indicated. This will be possible but will also incur additional expense in terms of expedited decision making and build logistics. Means to incentivise the speeding up of reaching COD could be explored.

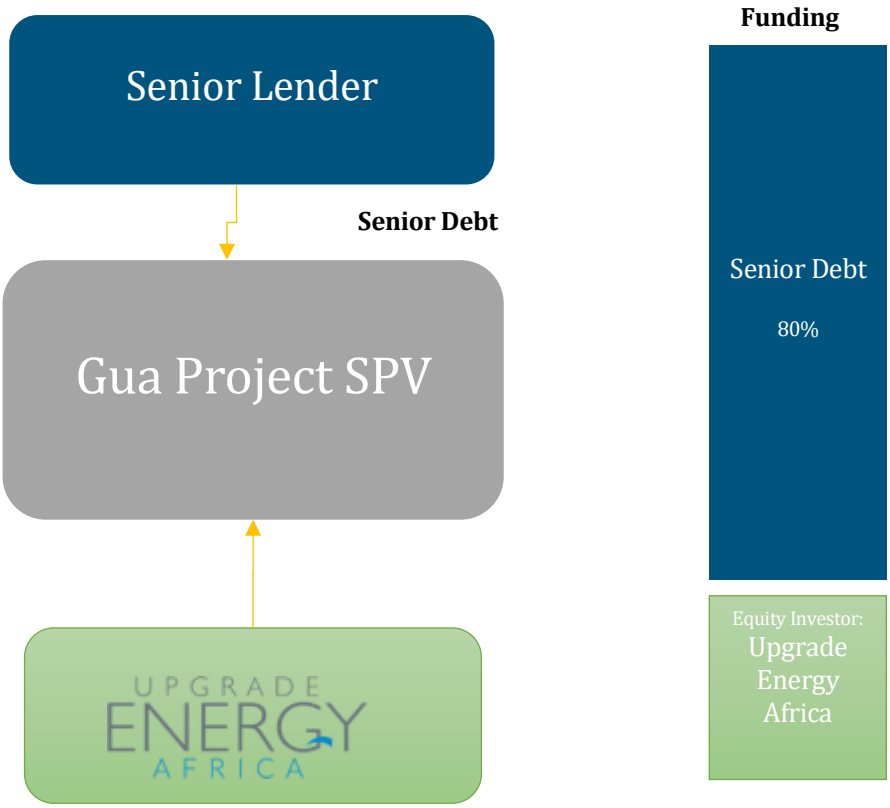
4 FINANCING OF THE PROJECT

This financial overview outlines the key strategies and considerations necessary to ensure the successful development and operation of your solar project.

4.1 FINANCING STRUCTURE

In line with best practices and financial sustainability principles, the project adopts a balanced financing structure with a target debt-equity split of 80/20. This approach ensures prudent risk management while optimizing leverage for investment returns. Equity financing, totalling approximately USD$ 1.17 million, will be sourced from Upgrade Energy Africa as Equity investor, while debt financing, amounting to approximately USD$4.6 million, will be procured through engagements with Development Finance Institutions and commercial banks.

4.2 OWNERSHIP STRUCTURE



4.3 SOURCE AND USE OF FUNDS

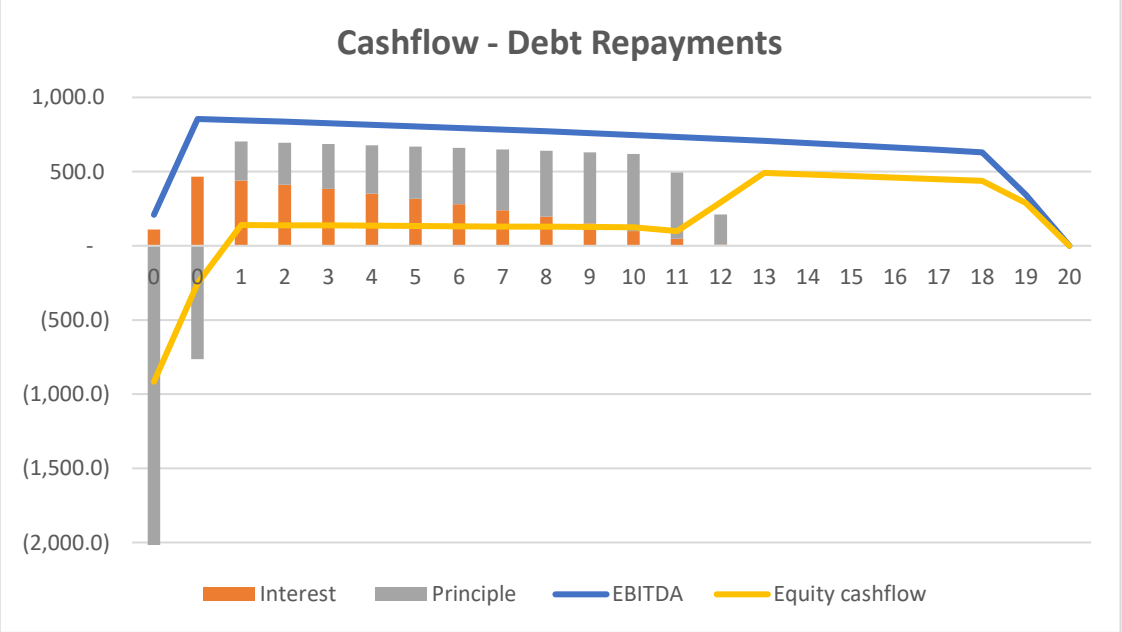
Source	K USD
Debt	4,675
Equity	1,170
Total	**5,845**

Debt Assumptions	
Debt Portion	80%
Tenure	13 years
Minimum DSCR	1.2x
Interest Rate	SOFR + 3.5%

Use Fund	
Description	**K USD**
EPC costs	4,380
Grid connection	929
Construction Management	100
Insurance	44
Professional fees	90
Construction finance	82
Financing costs	58
Reserves	50
Contingency	113
Total Cost	**5,845**

4.4 REVENUE STREAMS

The project's revenue stream is derived from a Power Purchase Agreement (PPA) with TANESCO. The PPA stipulates a tariff of USc7/kWh. The project's financial viability is bolstered by stable and predictable cash flows as reflected in the graph below. Monthly payment schedules under the PPA are designed to align with debt repayment obligations, ensuring consistent cash flow management and debt service coverage.



4.5 RETURN SUMMARY

The Project Return Summary provides key financial metrics and performance indicators for the solar project, offering insights into its profitability and investment potential.

Return Summary	
Fixed tariff	$ 70 / MWh
PPA term	20 year
Debt term	13 year
Min DSCR	1.2X
Investor IRR	14.5%
Payback period	11 years
NPV @ 10%	$ 510,000
Equity Multiplier	6 X

COD Tariff (USD/MWh): The project's contracted tariff is set at USc7 per kilowatt-hour (KWh)

EBITDA Margin: With an EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization) margin of 87%, the project demonstrates strong operational efficiency and profitability, reflecting its ability to generate substantial earnings before accounting for certain expenses.

Project IRR (Internal Rate of Return): The project's Internal Rate of Return (IRR) stands at 12%, representing the annualized rate of return on invested capital and indicating the project's attractiveness as an investment opportunity.

Min DSCR (Minimum Debt Service Coverage Ratio): The minimum Debt Service Coverage Ratio (DSCR) of 1.2X ensures sufficient cash flow to cover debt service obligations, indicating a prudent approach to debt repayment and mitigating default risk.

Equity NPV (Net Present Value): At a 10% discount rate, the Equity NPV is calculated at US$ 510,000, reflecting the present value of future cash flows attributable to equity investors and providing a measure of the project's value creation potential.

Equity Multiplier: The Equity Multiplier of 6X indicates the level of leverage employed by equity investors to finance the project, with higher multipliers suggesting greater reliance on debt financing relative to equity.

Investor IRR: The Investor IRR of 14.5% represents the expected rate of return for equity investors, accounting for the time value of money and reflecting the attractiveness of the investment opportunity from the perspective of equity holders.

Overall, the Project Return Summary highlights the favourable financial characteristics and investment prospects of the solar project, underscoring its potential to deliver attractive returns to investors while contributing to sustainable energy generation and economic development.

5 ECONOMIC ANALYSIS

The techno-economic viability of the 5MW Solar Power Project at Gua, Songwe District, 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 5MW 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.

6 SAFETY, OCCUPATIONAL HEALTH & ENVIRONMENT

Project Impact on Environment

The establishment of the Solar Power plant in Songwe will inevitably impact ecological and environmental systems. Below are the significant impacts expected during various phases of the project:

Construction Phase:
During the construction phase of the Solar Photovoltaic power plant, minor noise disturbances may occur in the vicinity due to excavation for foundation construction, especially if mechanical means are employed. Additionally, noise from construction equipment, emissions from motors/engines, and dust from material transfer may be present within the proposed site.

Start-up Phase:
Potential impacts during the start-up phase are primarily associated with technological adjustments, resulting in minimal noise within the designated site limits.

Operational Phase:

During the operational phase, no noise or gaseous pollutants are expected to be emitted, and there will be no consumption of chemicals or other liquid substances. The design of the Photovoltaic modules minimizes the risk of bird or bat collisions due to the low height of the support structures. Installation of a perimeter fence will further mitigate the risk of animal entry and electrical accidents. High electrical isolation of cables is ensured to prevent electric shocks, and the inclination of the photovoltaic modules reduces the radius of influence of solar rays reflection.

To address anticipated effects, the Solar photovoltaic power plant project will undergo Environmental and Social Impact Assessments (ESIAs). Consideration will be given to coexisting with other human activities based on natural resources and preserving the environment. Establishing disaster prevention and response plans is crucial due to inherent risks. The report advocates for environmental management best practices, emphasizing adherence to environmental, health, and safety (EHS) standards during the construction phase. Strict compliance with national environmental regulations will be maintained, with Environmental Management Plans and monitoring based on site baseline conditions.

Compliance & Practices HSE

Robust HSE management systems, including defined plans and processes, will be implemented to mitigate hazards and risks throughout the construction phase. Various mitigation tools such as risk assessments, training programs, toolbox talks, auditing, site meetings, and site monitoring will be utilized to uphold the highest safety protocols and prevent incidents. Adherence to HSE requirements and local legal regulations is mandatory, with contractors and subcontractors obligated to comply with HSE management systems at the site.

7 UGPRADE ENERGY

7.1 OVERVIEW

UPGRADE ENERGY is a solution driven international renewable energy company with operations in ten countries around the world. It was established in the global renewable energy space around the turn of the century. Our services include providing renewable energy solutions such as Solar PV, Wind, Storage solutions, Hydrogen, and Hydro. Since 2015, we have been present in South Africa and have expanded our operations to the Southern Africa (SADC) region. During this time, we have established a extensive renewable energy pipeline with a current availability of over 2,000 MW.

Our main focus is to design, develop and fund renewable energy projects, ensuring that each customer receives a unique, flexible and sustainable solution. We have extensive international experience in developing renewable projects across Europe, Africa, the Middle East, and Asia.

Visit www.upgrade-energy.africa for more information on Upgrade Energy.

7.2 PROJECT SPONSOR TEAM

Raf Vermeire - CEO

- CEO of Upgrade Energy Holdings and Upgrade Energy Africa since 2009
- A lawyer by training Raf has been involved in renewable and energy efficient solutions space across 12 countries.
- Serial entrepreneur and serial executive, leading start-ups in renewable and energy efficient solutions.
- MBA from the College of Europe

Emil Unger - Country Director

- Emil is a Director at UEA and holds an advanced certificate in accounting.
- In 2018 he was appointed director of UEA part of the European based company.
- Entered the South African renewable energy space in 2008 and was a founding member of the South African Wind Energy Association (SAWEA).

Arthur Vermeire - Financial Director

- Chartered Financial Analyst (CFA)
- Arthur is the CFO of UEA. He has a background in finance and law.
- He has gained financial and management experience as Director of finance for a fast-growing renewable energy IPP.
- Heads up the Upgrade Energy Africa's finance and investment team.

Mel Chagonda - Chief Strategist

- Mel heads up business development at UEA.
- He has successfully launched several products and services into the African market.
- Launched Moben Africa, a technology company in South Africa and took the offering to Botswana, Namibia, Lesotho, Zimbabwe, Malawi, Kenya, Nigeria, Ivory Coast and Dubai

Mandilakhe Qavane- Technical lead

- Highly skilled project engineer with extensive experience in the renewable energy sector
- Contributed to the development and execution of renewable energy projects.
- Responsible for developing and designing renewable energy projects, and construction management.
- Holds a BSC Honours Degree in Energy Studies.

Trevor Nair - Financial Manager

- Highly skilled financial manager with experience in auditing and financial management/analysis.
- Responsible for the day to day running of the company on the financial and administrative duties.
- Holds a B-Com Accounting degree and Associate General Accountant (SA) designation.
- Assist the financial and investment team as well as the project management te

Sam Ngoni Mutingwende - Business Development Manager

- - Experienced Business Development professional specialized in the energy industry, demonstrating a consistent record of success.
- - Proficient in diverse areas: Power Purchase Agreements, Electricity tariffs (Utilities & Independent Power Producers), Analytical Reviews, Renewable Energy, Electricity Regulations and Financial modeling.
- - Holds an MBA from the University of Gloucestershire (UK) and certifications including CIMA and ACCA, ensuring a robust understanding of finance and business operations.
- - Currently leading the advancement of renewable energy projects, focusing on solar and wind, in Southern Africa.

Sana Endley - Client Relationship manager

Highly skilled sale and relationship manager with 14 years of experience in direct sales and marketing.

Heads the sales and marketing drive of the company.

Assist in the project development, permitting, licenses and regulatory aspects of the company.

Event organiser and co-ordinator for various Upgrade Energy exhibits.

Liesbeth Van Schoubroeck: - External Legal

- Experienced Senior lawyer with a 30 year track record in both advisory and litigation for commercial, labour and criminal law.
- Proven history of guiding entrepreneurs with a hands on approach through international contracting.

Servaas Van Den Noortgate - External Financial and Technical advisory

- Over 10 years of experience in the development, financial management and asset management of renewable energy projects.
- Holds a Master of Business Engineering

Raf Terwingen - MuniFlex and Waste to energy developer

- Mayor of Maasmechchelen a town in Belgium

An experienced lawyer with an understanding of community development and innovative ideas for growth with communities.

7.3 UPGRADE ENERGY TRACK RECORD

UPGRADE ENERGY AS GREENFIELD LEAD DEVELOPER

Upgrade Energy has developed several projects from greenfield. Responsibilities during such a development included (but not limited to):

- general responsibilities such as management of permitting applications
- facilitating SPV company set-up & administration activities)
- overseeing the engineering, procurement & management of various works packages
- management up to financial closure.
- business supporting services (capital budget development & management; support to financing & funding teams;
- facilitating commercial & legal activities
- financial close activities (management & monthly reporting, review of Owners' design criteria
- capital budget refinement & management
- staff training program requirements & schedules
- assistance to procurement and commercial & legal functions.
- Engineering of designs and project plans
- management of Performance testing
- EPC & EPC Management
- ....

SOUTH AFRICAN PROJECTS

Project	Size MW	PPA Date	Current Status	Approximate Project Cost (USD million)	Location
Coega Wind farm	2	2010	In operation	$ 3.1	South Africa
Postmasburg solar project*	100	2021	completed	$ 91	South Africa
Leeudoringstad I	20	2022	Construction Ready	$20	South Africa
Leeudoringstad II	20	2022	Construction Ready	$ 20	South Africa
Leeudoringstad III	15	2022	Construction Ready	$ 16	South Africa
Swartberg wind project	10	2022	Construction ready	$ 18	South Africa

ELIDZ solar project	50	2023	Nearing shovel readiness	$ 47	South Africa
Leeudoringstad IV	145	Tbd	In Development	$ 130	South Africa
Grootvlei	100	Tbd	In Development	$90	South Africa
Further solar + wind Projects in Development	1200	Tbd	In development	tbd	South Africa

*** Postmasburg Solar Project:** One of the first private wheeling projects in South Africa.
Upgrade Energy and equity partner reached:

- PPA
- NERSA registration
- Eskom wheeling agreements
- Financial close
- Start construction Q1 2024

INTERNATIONAL COMPLETED PROJECTS

Projects where Upgrade Energy was lead developer both in South Africa and elsewhere (Europe and Asia)

Project	Size MW	PPA Date	Current Status	Approximate Project Cost (USD million)	Location
Irshanksa Solar Project	30	2019	In operation	$ 29.5	Ukraine
Briza Solar Project	4	2018	In operation	$ 4.1	Turkey
UGEP Solar Project	2	2016	In operation	$ 2.4	Philippines
Gramybel Solar Project	1	2014	In operation	$ 1.5	Belgium
Sea Tank Terminal Solar Project	2	2019	In operation	$ 2.4	Belgium
Sapa Lichtervelde Solar Project	2	2019	In operation	$ 2.5	Belgium
Penyrheollas Solarfield Project	5	2018	In operation	$ 5.1	UK
Fullerton Solar Project	4	2018	In operation	$ 4	UK
Aplina Solar Project	2	2018	In operation	$ 2.2	Bosnia
Numerous rooftop solar projects	100+	2008-2019	In operations	N/A	Europe

ent in sustainable energy generation, transmission, and distribution in the United Republic of Tanzania. The focus on local content promotion and participation ensures that our Joint venture operations not only deliver clean and reliable energy but also create opportunities for local businesses, suppliers, and workers to thrive. Together, we are lighting the way towards a brighter, more sustainable future for Tanzania.

8 EPC CONTRACTOR AND O&M CONTRACTOR

Upgrade Energy is a company specializing in comprehensive energy solutions and services. With our extensive industry experience, we have established strong partnerships with multiple Engineering, Procurement, and Construction (EPC) as well as Operations and Maintenance (O&M) companies. We have already initiated the engagement process with our trusted partners for the upcoming project. We have commenced the Request for Proposal (RFP) process to ensure a thorough evaluation of potential partners who align with our project goals and objectives.

8.1 UPGRADE ENERGY SUPPORTING PARTNERS & ADVISORS

At Upgrade Energy Africa, we hold our esteemed partners in high regard, valuing their extensive experience and proven track record of successful transactions across various sectors within the African continent. Our commitment to excellence is underscored by the caliber of partners we collaborate with, each bringing unparalleled expertise to their respective fields within the region.Partners

In our journey towards sustainable growth and impactful ventures in Africa, we have forged strong alliances with esteemed partners who share our vision and commitment to excellence. Among these trusted collaborators are:

8.2 IX ENGINEERS

Renowned for their unwavering dedication to engineering excellence, IX Engineers stands as a beacon of innovation and problem-solving prowess in Africa's dynamic landscape. With a deep understanding of the unique challenges and opportunities present in African markets, IX Engineers delivers tailor-made engineering solutions that not only meet but exceed expectations. Their expertise spans a wide range of sectors, from infrastructure development to renewable energy projects, positioning them as invaluable partners in our pursuit of sustainable progress.

8.3 SIVEST

At the forefront of environmental studies and consultancy, Sivest embodies a steadfast commitment to preserving Africa's natural heritage while fostering responsible development. With a team of seasoned experts and scientists, Sivest conducts comprehensive assessments and provides sustainable solutions that harmonize with the diverse ecosystems of Africa. Their dedication to environmental stewardship and holistic planning ensures that our projects are not only economically viable but also environmentally sound, paving the way for a greener, more resilient future.

8.4 VUNANI

in the ever-evolving landscape of Africa's financial markets, Vunani stands as a beacon of expertise and strategic insight. As a premier financial advisory firm, Vunani offers invaluable guidance and foresight to navigate the complexities of Africa's financial terrain. With a deep understanding of local dynamics and global trends, Vunani provides tailored solutions that empower businesses to seize opportunities, manage risks, and unlock their full potential. Their unwavering commitment to excellence and integrity makes them a trusted partner in our quest for sustainable growth and prosperity. Vunani is not only Upgrade Energy’s financial advisor, they are also investors in the company.

8.5 DELPHOS

Facilitating access to capital and investment opportunities, Delphos plays a pivotal role in fueling growth and prosperity across Africa. Specializing in funding consulting, Delphos leverages its extensive network and expertise to connect businesses with the capital they need to thrive and expand their operations. Whether through innovative financing structures, strategic partnerships, or investment advisory services, Delphos empowers businesses to realize their ambitions and drive positive change in Africa's markets.

In collaboration with these esteemed partners, we are confident in our ability to navigate the complexities of Africa's markets, overcome challenges, and unlock new opportunities for sustainable development and prosperity. Together, we stand united in our commitment to building a brighter future for Africa and its people.

9 WARRANTIES

All components shall carry the standard warranties as specified by the respective component manufacturers as detailed in the table below.

Description	Warranties
AC Cables	7 years
LV Switchgear	5 years
MV Equipment	2 years
Inverters	5 years
PV Module Substructure	10 years
DC Cables	5 years
PV Modules (Product)	12 years
PV Modules (Power Output)	30 years
Control and Monitoring System	5 years