ZBS Investments Ltd

SOLAR POWER PLANT 8MWP
NYASORO – THE UNITED REPUBLIC OF TANZANIA

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1. Introduction

Over the past decade, in an effort to strengthen and modernize the energy sector, the Tanzanian government has undertaken a series of far-reaching policy reforms, including the establishment of a regulatory entity and the formulation of an energy policy that encourages private participation through independent power producers (IPPs) and small-scale power producers (SPPs). For SPPs, the government has defined rules, standard contracts and standard tariff methods to facilitate private sector participation in the development of grid-connected and off-grid projects, primarily for rural electrification. As a result of these initiatives, the IEPs and EPPs have contributed significantly to economic growth in many sectors, with the IEPs alone accounting for 40 percent of the national grid's power generation capacity. In line with its investment in power generation capacity, the government has initiated projects to expand transmission capacity to deliver power to markets.

2. The Project

The proposed solar power plant in Nyasoro in the United Republic of Tanzania will be developed on approximately 12.0000m² of land. The plant will have a total of 19.752 photovoltaic panels and a total power of 8MWp which will be able to produce 15,781 Mwh annually. This is equivalent to the electric consumption of 9000 Homes and will also avoid the release of 13702,365 tCO_2 (tons of CO2) every year. The project development process will be in consultation with TANESCO's technical teams to ensure quality, sustainability and conformity to the commitments of TANESCO.

The project will be developed within the framework of a partnership of ZBS Investments the Project Developers, our Technical Partners and the government of United Republic of Tanzania. ZBS Investments specializes in turnkey solutions in the renewable energy sector on a commercial and large-scale level. ZBS covers the entire value chain, ranging from project development, construction, financing to operations and maintenance of renewable energy systems in the African region. Their expertise focuses on the technical and economical optimization of solar, biomass and hydro power plants.

2.1. Situation of the Installation

The photovoltaic power plant project is located in the village of Nyasoro in Tanzania. Nyasoro is a village in Tanzania with a population of approximately 2,790. Nyasoro is located north of Sombanyasoko.

PVsyst – Simulation report

Grid-Connected System

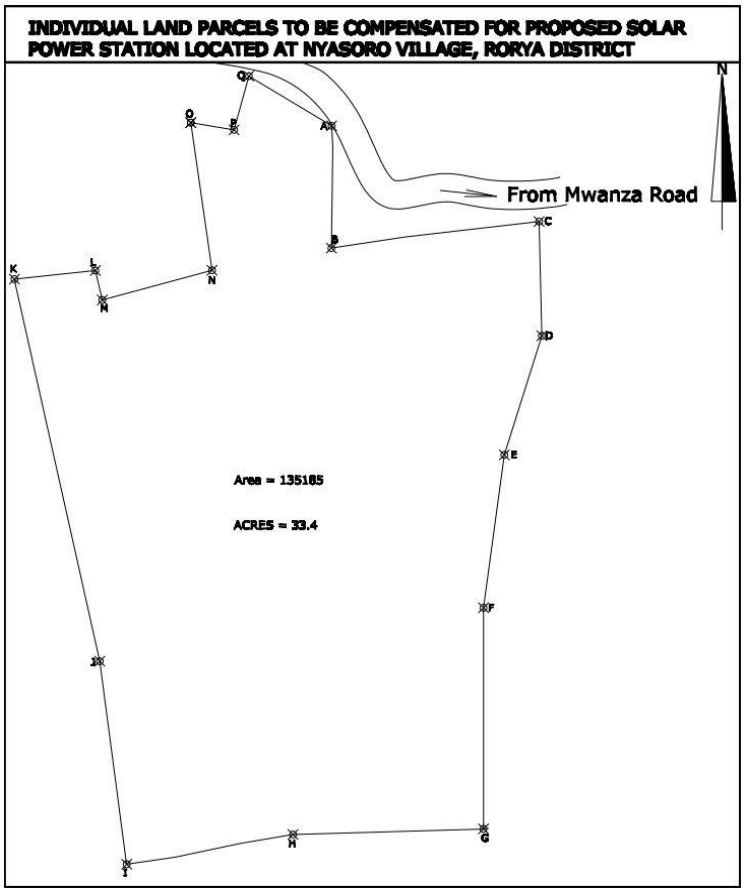
Project : NYASORO

Variant : New Simulation Variant

No 3D scene defined, no shadings

System Power : 8001 kWp

Nyabirundo – United Republic of Tanzania



GPS DATA/LOCATION OF THE PARCEL		
POINT	NORTHING	EASTINGS
A	9848236	637186
B	9848145	637183
C	9848164	637329
D	9848083	6373331
E	9847998	637305
F	9847890	637290
G	9847733	637290
H	9847729	637156
I	9847708	637039
J	9847852	637020
K	9848123	636960
L	9848129	637017
M	9848108	637022
N	9848129	637099
O	9848234	637084
P	9848229	637115
Q	9848267	637125

2.2. Main Characteristics of the Project

The optimization of the use of the land will be done by the implementation of a photovoltaic plant on the ground, on definitively redeveloped sectors.

Project Summary

Geographical Site	Situation		Project Settings	
Nyabirundo	Latitude	-1.88 °S	Albedo	0.20
The United Republic of Tanzania	Longitude	34.12 °E		
	Altitude	1445m		
	Time zone	UTC+3		

Meteo data
Nyabirundo
Meteonorm 8.0 (1991-2007), Sat = 100% - Synthetic

System summary

Grid-Connected System — **No. 3D scene defined, no shadings**

PV Field Orientation	**Near Shadings**	User's needs	
Fixed plane	No Shadings	Unlimited load (grid)	
Tilt/Azimuth 10/0*			

System information

PV Array		Inverters	
Nb. Of modules	22224 units	Nb. Of units	62 units
Pnom total	8001 kWp	Pnom total	6200 kWac
		Pnom ratio	1.290

Results summary

Produced Energy	15352 MWh/year	Specific production	1919 kWh/kWp/year	Perf. Ratio PR	81.95%

PV Array Characteristics

PV module		**Inverter**	
Manufacturer	DMEGC	Manufacturer	Huawei Technologies
Model	DM360-m156-72	Model	SUN2000-100KTL-M1-400Vac
(Original PVsyst database)		(Original PVsyst database)	
Unit Nom. Power	360 Wp	Unit Nom. Power	100 kWac
Number of PV modules	22224 units	Number of inverters	62 units
Nominal (STC)	8001 kWp	Total power	6200 kWac
Modules	1389 Strings x 16 in series	Operating voltage	200-1000 V
At operating cond. (50 C)		Max. power (=> 30C)	110 kWac
P mpp	7220 kWp	Pnom ratio (DC :AC)	1.29
U mpp	564 V		
I mpp	12793 A		
Total PV power		**Total inverter power**	
Nominal (STC)	8001 kWp	Total power	6200 kWac
Total	22224 modules	Nb. of inverters	62 units
Module area	43122 m2	Pnom ratio	1.29

Array losses

Thermal Loss factor
Module temperature according to irradiance
Uc (const) 20.0 W/m2K
Uv (wind) 0.0 W/m2K/m/s

DC wiring losses
Global array res. 0.74m
Loss Fraction 1.5 % at STC

Module Quality Loss
Loss Fraction -0.8 %

Module mismatch losses
Loss Fraction

Strings Mismatch loss
Loss Fraction 0.1%

IAM loss factor
Incidence effect (IAM): Fresnel smooth glass, n = 1.526

0	30	50	60	70	75	80	85	90
1.000	0.998	0.981	0.948	0.862	0.776	0.636	0.403	0.000

Main results

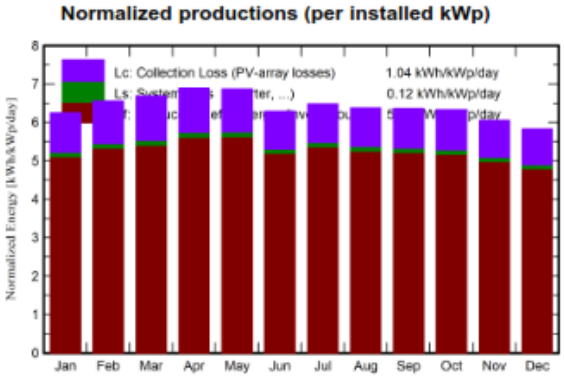
System Production
Produced Energy 15352MWh/year
Specific production 1919 kWh/kWp/year

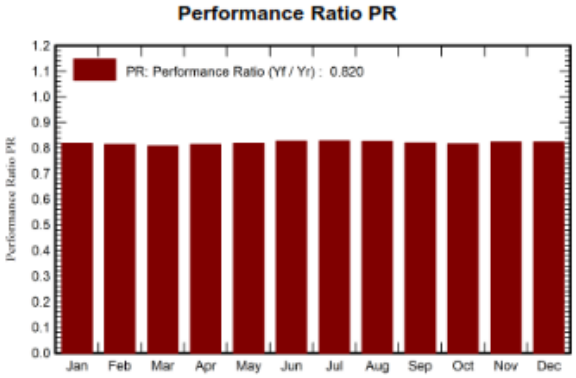
Economic evaluation
Performance Ratio PR 81.95%

Investment
Global 8,125,700 EUR
Specific 1.02 EUR/Wp

Yearly cost
Annuities
Running Costs
Payback period

LCOE
Energy cost 0.02 EUR/kWh





Balances and main results

	Globhor kWh/m2	DiffHor kWh/m2	T_Amb C	GlobInc kWh/m2	GlobEff kWh/m2	EArray MWh	E_Grid MWh	PR ratio
January	210.1	60.0	22.3	193.6	186.6	1296	1268	0.818
February	192.8	55.0	22.9	183.5	178.0	1223	1196	0.814
March	209.6	59.9	22.7	207.5	201.9	1373	1342	0.808
April	200.1	53.4	21.9	206.8	201.6	1379	1347	0.814
May	199.4	47.2	21.9	213.1	207.7	1429	1397	0.819

June	174.2	52.7	21.4	188.7	183.7	1276	1248	0.827
July	186.8	54.2	21.4	201.0	196.0	1360	1330	0.827
August	188.9	62.3	22.0	197.6	192.5	1334	1304	0.825
September	189.9	67.7	22.0	190.9	185.5	1281	1252	0.820
October	203.9	67.6	22.5	196.3	190.1	1312	1283	0.817
November	195.1	61.1	21.6	181.6	175.0	1223	1196	0.823
December	197.6	63.5	21.9	180.7	173.4	1216	1190	0.823
Year	2347.8	704.51	22.03	2341.5	2272	15703	15352	0.820

Legends

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

2.3. Financial Evaluation of the solar power plant

Cost of the system

System summary	
Total installation cost	8,125,700.00 EUR
Operating costs	27,450.00 EUR/Year
Produced Energy	15352 MWh/Year
Cost of produced energy (LCOE)	0.022 EUR/kWh
Depreciation	
Depreciable assets	1,346,800.00 EUR
Slavage value	0.00 EUR
Total redeemable	1,346,800.00 EUR
Depreciation period	20 Years
Financing	
Own funds	575,021.09 EUR
Subsidies	34,501.27 EUR
Loan – Redeemable with fixed annuity – 12 Years	7,516,177.64 EUR
Electricity sale	
Feed-in tariff	0.07 EUR/kWh
Duration of tariff warrantY	20 Years
Annual connection tax	0.00 EUR/kWh
Annual tariff variation	0.0 %/Year
Feed-in tariff decreases after warranty	50.00 %
Return on investment	
Payback period	9.6 Years
Net present value (NPV)	14,512,270.69
Return on investment (ROI)	178.6%

System Lifecycle Emissions Details			
Item	LCE	Quantity	Subtotal (kgCo2)
Modules	1927 kgCo2/kWp	7111 kWp	13701006
Supports	4.40 kgCo2/kg	197520 kg	869523
Inverters	436 kgCo2/units	62.0 units	27040

2.4. Land agreement

The land acquisition for the identified parcels will be done by the project developers. The entire parcels intended for the solar power station will be available for the project.

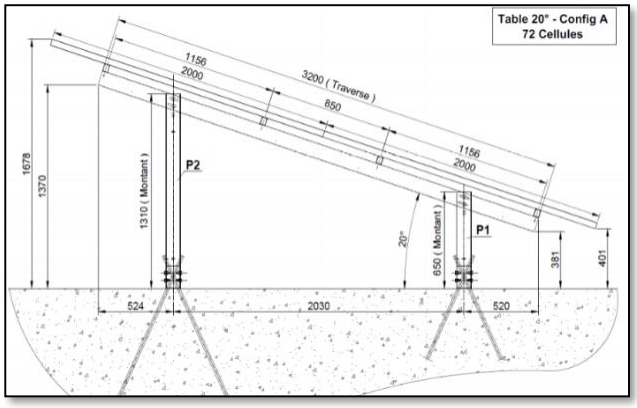
2.5. Technical presentation

The solar power plant, with a fenced area of about 8000m², consists of 14805 photovoltaic modules with an expected unit power of 405Wp. The supports are arranged in continuous, parallel and spaced lines in order to optimize the connection.

2.5.1. Supporting structures

As we cannot anticipate the evolution of technologies and therefore the precise characteristics of the components of the modules or supporting structures (dimensioning) that will be used at the time of the construction of the power plant, realistic standard dimensions known today have been used to carry out the design of the solar park and the calculation of the right-of-way and production. If the dimensions of the tables can be slightly different at the time of the construction, the number of tables installed will be adapted to respect the global right-of-way of the park, the locations and dimensions of the tracks and the electrical buildings. Thus, if the tables used are longer, the number of tables will be reduced, and vice versa. It is therefore possible to conclude that the rights-of-way of the panels, and therefore their impacts, will remain globally the same.

2.5.2. Sectional drawing of the structures

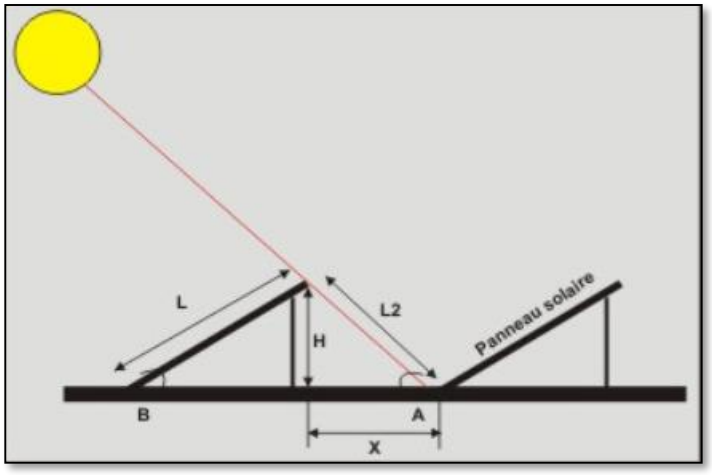


For ease of maintenance and construction, the solar power plant will be composed of single fixed length structures, regardless of the location on the site. Fixing with a perforator avoids the presence of construction machinery and concrete work. Impact on the ground. Materials are recyclable and reusable. The carbon footprint is reduced.

A minimum ground clearance of 0.8 m will facilitate the maintenance of the site and allow small fauna to circulate freely. This ground clearance also allows sunlight to pass under the modules. This diffuse light reaches the ground level and allows the vegetation to develop. Similarly, the fixed structures have a relatively modest height. **For the sake of landscape integration, the height of the panels in relation to the ground will be a maximum of 3.5m.**

The photovoltaic panels are mounted in series on the structures, facing due south and with an inclination of about 15°. **Each structure (or table) is 17.1 m long and 6 m wide.** A sufficient distance between each row is provided to reduce the shadow effect with the previous row.

2.5.3. Layout optimization scheme



2.5.4. Distribution substations

The distribution substations are prefabricated concrete buildings (or containers with thermally insulated steel walls) with a maximum surface area of 28.5 m² each, i.e. 85.5 m². The following equipment is installed in these buildings: inverters that transform the direct current produced by the modules into

alternating current; a transformer that raises the voltage at the output of the inverters to a voltage acceptable to the network (20kV). These substations comply with current electrical standards (C13-200 in particular).

Examples of concrete and container distribution substations

2.5.5. The delivery structure

The delivery structure is the interface between the public distribution network and the internal network of the solar power plant. In particular, it houses the means of protection (circuit breakers), energy metering, supervision and control of the solar power plant.

The delivery structure consists of two prefabricated concrete buildings that comply with current standards (C13-100). Each building has a maximum surface area of 31.5 m², i.e. 63 m² in total.
The first building includes an electrical delivery station standardized ENEDIS and the control systems of the park while the second includes an electrical filter tuned to the frequency of the tariff signal (175 Hz).

2.5.6. Cable networks

Inside the solar plant, the following cable networks will be installed:

(a) **Electrical Cables:** They are intended to transport the energy produced by the modules to the distribution substations and then to the delivery structure.

(b) **Fiber Optics:** It allows the exchange of information between each distribution substation and the computer room (SCADA), located in the delivery structure. An internet connection also allows remote access to this information.

(c) **Grounding :** Made of copper cables, it allows :

i. grounding of metallic masses,
ii. setting up the neutral system,
iii. as well as the evacuation of possible lightning strikes.

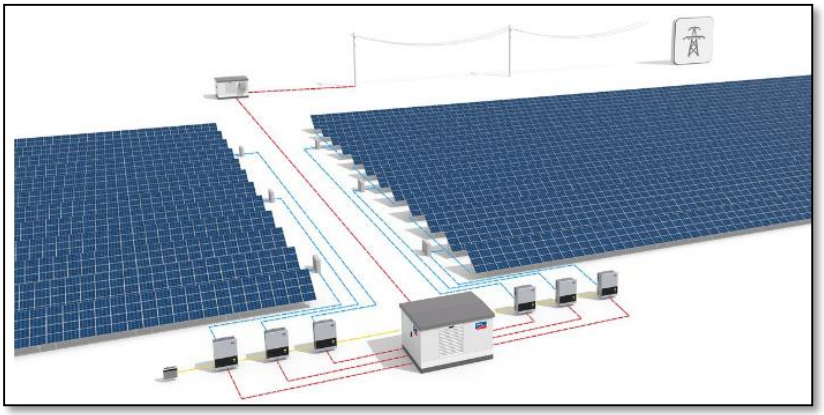
2.5.7. Access roads and crane areas

Access to the site will be from the road network. Within the park, gravel tracks will be created to access the installations (modules, distribution substations). In front of the delivery structure and the distribution substations, craning areas will be created in order to lift the substations. A natural permeable material such as GNT (Grave Non Traitée) will be used to stabilize these surfaces (750 m² in total). The spaces between rows of panels, intended to limit shading, will not be paved, but will also allow access to the installations for maintenance operations.

2.5.8. Connection to the national electrical network - S3RER

The electrical connection to the existing public distribution network is defined and realized by TANESCO or the public distribution network manager of the area, which is the project manager and the project owner. Indeed, the connection works necessary for the evacuation of the generated electricity constitute an extension of the public distribution network. Thus, this network can be used to connect other consumers and/or producers.

The electrical connection is underground according to the standards in force. The route is generally along the roadside. Although public, the costs inherent to the creation of this network (studies and installation) are entirely at the charge of ZBS Investments.



Network solar power plant connection

2.6. The construction of the park - progress of the site

2.6.1. General

The construction site of the solar power plant will take place in several stages spread over approximately 8 months. The number of workers planned for the duration of the construction site is about 30 people per day on average with about 40 people in peak periods. All the material will be transported by truck. The construction of the solar park will thus generate an average of four trucks per day for the duration

of the construction site.

Safety and environmental protection rules will be set for the various service providers working on site. The ROFACE11 will indicate the rules of good environmental conduct concerning, in particular, the prevention of accidental pollution risks, the use of space, noise and dust, traffic on the roads and the restoration of accesses. It can be annexed to the ZBS Investments prevention plan. Throughout the construction site, particular attention is paid to waste management. This waste is sorted (recyclable or not) and grouped in adapted containers.

2.6.2. Site preparation

The site can be prepared prior to the start of construction and then surfaced if necessary. A working meeting to organize the work will be set up. This will assist to:

i. Understand the environmental constraints of the site.
ii. Prepare the documents related to the safety of the system: Prevention plan, traffic plan
iii. Study the possibility of installing a life base for the duration of the works
iv. Optimize the areas necessary for the teams and the plant (parking, waste sorting, water point in case of fire...) with the municipality

The fence and the life base will be set up at the beginning of the construction site, access will be strictly reserved to authorized persons only. The living base, with an area of about 1500 m², allows to accommodate the contractors for the construction period of the solar power plant and constitutes a storage area. The living base is composed, among others, of the following elements:

i. Site office(s)
ii. A changing room - refectory;
iii. A sanitary block equipped with a double wall septic tank;
iv. A container(s) for equipment and tools;
v. The creation of a parking area for vehicles and construction machinery;
vi. The creation of a waste zone. Waste bins will enable selective sorting of the different categories of waste produced. They will be regularly emptied and the waste sent to approved treatment centres ; the establishment of a zoning intended to receive the different categories of materials in transit. Thus, specific waiting areas will be created, whether it is earth or other materials.

2.6.2.1. Construction of roads, craning areas and platform for the water tank

The internal tracks of the power plant as well as the craning areas of the electrical substations will be paved by adding natural materials, of the GNT (Grave Non Traitée) type, compacted in layers to support the weight of the machines. These surfaces will therefore not be waterproofed. The need in terms of fire

extinguishing water is 120 m3. The practice is to install a tank on a platform of about 135 m², protected by a sand bed and/or an anti-puncture geotextile. The access to the equipment of the plant will be assured by a peripheral track. It will be about 6 m wide, including 5 m of tarmac. The tracks can be widened if necessary in the curves to facilitate the passage of more cumbersome vehicles. The modules will be slid one by one, manually, into the rails of the metal structures. This technique makes it possible to install large quantities of modules quickly and to significantly shorten the overall construction time.

2.6.2.2. Installation of cable networks

The electrical lines necessary to transport the energy to the point of delivery to the network will be installed along the metal structures or underground. Fiber optic communication and grounding networks will be buried. The trenches will be dug with a mechanical shovel or trencher, preferably along the edge of the runway in order to minimize the footprint of the work. Once the cable is unrolled in the trench, the trench will be backfilled and compacted. Sand may be added to the trench to protect the buried cables.

Excavated materials will be reused for backfill if their mechanical properties permit. Otherwise, they will be reclaimed on site to avoid their disposal. The dimensions and installation method of the cables will be verified by an independent inspection body before the park is commissioned.

Burying the cable using a trencher

2.6.2.3. Installation of electrical substations

The location of the delivery station and the electrical stations will be defined with the operator and the technical management of the storage pole. Its implementation will be adapted to the chosen location (redeveloped area, constrained zone, etc.).

An excavation will be carried out to a depth of approximately 80 cm. The electrical substations will be placed on the sand bed with the help of a crane so as to bury about 60 cm of them. This buried part will be used for the passage of the cables of the on-site networks inside the substations. The excavated materials will be reused for backfilling if their mechanical properties allow it. Otherwise, they will be reclaimed on site to avoid their disposal. At the exit of the solar power plant, at the level of the delivery structure, a link with the public electricity network will be realized by TANESCO.

2.6.2.4. Installation of an electrical substation

The solar power plant will require the installation of transformer-inverter stations and 1 delivery station. The layout of these elements will be studied in order to improve the insertion in the landscape, in particular according to the various points of view on the site. The connection of the installation to the electrical distribution network is done through cables allowing the evacuation of the produced energy.

The electricity produced by the photovoltaic plant will be routed in low voltage (LV) to the distribution substations (inverters / transformers) where the DC voltage will be transformed into AC voltage (role of the inverter) and then raised to the voltage level required by TANESCO (role of the transformer).

In order to minimize energy losses associated with the transmission of electricity, the distribution substations will be inside the park. Once raised to the voltage level of the public distribution network, the energy will be collected from the distribution substations to the delivery station at the property line to ensure access for the operating personnel. There, the energy is metered and then injected into the public grid through a cable connecting the photovoltaic plant to the TANESCO source station.

2.6.2.5. Making the connections

The modules will be connected in series to form a string. Then the strings, grouped in parallel in the connection boxes, will be connected to the electrical substations.

Photovoltaic plant

Left: Wiring of the panels - Right: Connection box

2.6.2.6. Tests

Prior to commissioning, operational tests will be carried out. They aim to ensure the proper functioning of all components of the plant from an electrical and remote control (supervision) point of view.

2.6.2.7. Commissioning and withdrawal of the site

If the tests are favourable, the plant will be commissioned. The base camp will then be dismantled: the buildings will be moved to another site; the logistics platform will be dismantled; the site where the base camp was installed will be restored.

2.6.2.8. Site maintenance

There will be no security guards on the site. On the other hand, the plant will be equipped with a permanent video surveillance system and a remote management system of the installation from our company's headquarters. This system allows us to be warned in case of failure and to react quickly for corrective maintenance operations.

The main activities during the exploitation phase will be the analysis of the data recorded by the acquisition unit (incident solar energy, temperature of the modules, energy produced, energy injected into the network ;

- The visual control of the modules and structures, the possible detection of objects masking
- The cells (cardboard, plastic);
- The verification of the state of the cables and connectors;
- Checking the condition of the connection boxes;
- Verification of the structure and modules resistance;
- Electrical tests of the strings;
- Verification of the inverters, possibly infrared thermography of the protection cabinets;
- Verification of the cells and electrical connections;
- Verification of the electrical protections, lightning protections, continuity of the grounds and ground connections.

2.6.2.9. Maintenance of the installation

A natural recovery of the vegetation in front of the panels will allow the maintenance of a low grass cover, a stabilization of the dust and thus the prevention of any possible flight of particles.
This cover will be mowed regularly, planned according to the regrowth of the vegetation and the commitment to biodiversity (late mowing, for example). A light machine will be used between the paths and a brushcutter will be used under the modules. No phytosanitary products will be used in the plant. Maintenance can also be done by sheep. No cleaning of the panels is envisaged. Indeed, the natural action of the rain ensures a priori a sufficient washing of the panels. The practical aspects of the maintenance will be in accordance with the environmental measures of the plant.

2.6.2.10. Security

The site will not be open to the public for security reasons. Thus, the entire site will be fenced. Gates will allow access to the site for maintenance teams and the fire department. In order to ensure the security of the site, different equipments will be planned: Video surveillance; fencing on the entire project.

2.7. Choice of Photovoltaic Modules

At this stage of development, the choice of module supplier has not yet been made. This choice is based on several criteria:

- The price of the module
- The origin of the module to guarantee a good carbon balance

- The supply of modules in sufficient quantity at the right time

2.8. Work Phase

The actual construction of a photovoltaic park consists of two main phases, each with several sub-phases. Preparation of the site: installation of the base camp (4 weeks), civil engineering/levelling (3 weeks), securing the site (2 weeks).

- Installation of structures, solar modules and electrical components
- Establishment of foundations (driven or drilled piles preferred - 5 weeks),
- Installation of electrical cables (8 weeks), installation of structures and modules (8 weeks), installation of electrical equipment (7 weeks) and revegetation of reworked areas (4 weeks)

2.9. Operation Phase of the Plant

The photovoltaic installation is planned to be operated for a period of 30 years. The Nyasoro photovoltaic park will be added to the computerized supervision platform of the ZBS Investments installations in operation for :

- Control in real time the production of the installation,
- Track incidents remotely,
- Manage breakdowns and unavailability (network decoupling, electrical faults …),
- Plan maintenance interventions,
- Control the security of the park (technical security, intrusions)

2.10. Dismantling phase of the plant at the end of the operating period

2.10.1. Dismantling of the plant

ZBS Investments commit itself that at the end of the exploitation, to dismantle the whole installation and to recycle all the elements that can be recycled, in accordance with the regulatory conditions in force or to come. The dismantling of a photovoltaic power plant, due to the materials that constitute it and its configuration, is not complex. Moreover, all the materials used (steel, aluminum, copper) are recyclable. The plant contains little concrete (stringers, slabs or others), only the feet of the fence posts are to be taken into account. No solvent or soil treatment product is used.

The dismantling of the plant will start at the end of the operating period and will be carried out in common agreement with the municipality. The main operations are listed below:

- Fences, photovoltaic modules, and structures will be directed to the recycling channels via the appropriate collection systems or recovered for recovery;

- The concrete mass of the fences will be removed with a shovel and the anchors as well;
- The cables will be extracted from the trenches, and the substations will be sent to the supplier of the electrical equipment, who will take care of their recycling, including the SF6 gas from the cells and the oil from the transformers;
- Developments will be removed with gentle scraping of deposited material for tracks;
- Once all the elements have been dismantled, they will be repackaged into parcels in order to be transported to the collection points for recycling.

2.10.2. Recycling of power plant components Recycling of modules

The recycling of crystalline silicon modules consists of a simple heat treatment to separate and recover the components including precious metals (aluminum, copper and silver). The plastic such as the film on the back of the modules, the glue, the gaskets, the cable sheaths and the connection box are also burnt.

Once these operations are completed 84% of the product mass is resold, while the plastic polymers are reused for manufacturing. Once separated from the modules, the cells undergo a chemical treatment that removes the metal components. These recycled wafers are then :

- Integrated into the cell manufacturing process and used for the manufacture of new modules,
- Either melted and integrated in the manufacturing process of silicon ingots.
- The end-of-life recycling of photovoltaic panels has become mandatory in France since August 2014.

The recast of the WEEE Directive - 2002/96/EC has resulted in the publication of a new version where end-of-life photovoltaic panels are now considered as waste electrical and electronic equipment (WEEE) and enter the WEEE recovery process

The principles :

- Producer responsibility (manufacturer/importer): collection and recycling operations and their financing are the responsibility of manufacturers or their importers established on French territory, either individually or through collective systems.
- Free collection and recycling for the end user or holder of end-of-life equipment.
- Registration of manufacturers and importers operating in the EU.
- Setting up a financial guarantee for future collection and recycling operations when a product is put on the market. In France, the European association PV CYCLE, through its French subsidiary, is responsible for collecting this tax and organizing the recycling of modules at the end of their life.

Founded in 2007, PV CYCLE is a European non-profit association, created to implement the commitment of photovoltaic professionals on the creation of a recycling channel for end-of-life modules. Today it manages a fully operational collection and recycling system for end-of-life photovoltaic panels throughout Europe.

The collection of crystalline silicon modules and thin films is organized according to three processes:

- Containers installed at hundreds of collection points for small quantities,
- Customized collection service for large quantities,
- Transport of the collected panels to recycling partners by certified companies.

The collected modules are then dismantled and recycled in specific factories and reused in the manufacture of new products.

2.10.3. Recycling of inverters

The European directive n° 2002/96/CE (WEEE or D3E) modified by the European directive n°2012/19/UE, concerning waste electrical and electronic equipment, was adopted within the European Union in 2002.

Since 2005, it obliges manufacturers of electronic equipment, and therefore UPS manufacturers, to collect and recycle their products at their own expense.

2.10.4. Recycling of other materials

The other materials resulting from the dismantling of the installations (concrete, steel) will be recycled through the traditional channels. Metal parts that are easily recyclable will be recovered as raw material. Inert waste (gravel) will be reused as backfill for new roads or foundations.

3. Compatibility of Urban Planning Documents

3.1. Bringing the POS into conformity

The application for a building permit for the implementation of the photovoltaic power plant will be submitted by ZBS Investments. An application for a town planning certificate will be made. This certificate freezes the town planning rules in force at the time of its request. Consequently, it can only guarantee that the town planning rules applicable to the land, the administrative limitations to the right of ownership and the taxes due will not be called into question. In any case, it does not exempt the project owner from the building permit application procedure.

3.2. Justification and Reason for Choosing the Project

ZBS Investments has been working on the territory to find land that can accommodate renewable energy production units. The search for optimization of the production and the avoidance of sensitive environments prevailed during the reflections carried out. Three variants were studied, the maintenance of the ecological functionality of the site, the respect of the mining risks, the respect of the urbanism and a good landscape integration having been the guideline for its conception.

Moreover, the implementation of a photovoltaic power plant on this site does not affect the preservation of agricultural areas. According to the MEEDDM circular of December 18, 2009 on the development and control of ground-mounted photovoltaic power plants, "ground-mounted power plant projects are not intended to be installed in agricultural areas, particularly those that are cultivated or used for livestock. The project of a ground-mounted photovoltaic power plant on the Nyasoro site therefore has many assets and that ZBS Investments has been convinced by the enthusiasm of the project leaders.

3.3. Texts Governing the Public Inquiry & Integration into The Global Procedure

3.3.1. Purpose of the Survey

The public inquiry procedure is provided for in Article L123-1 of the Environmental Code: "The purpose of the public inquiry is to ensure public information and participation as well as the consideration of the interests of third parties during the preparation of decisions likely to affect the environment mentioned in Article L. 123-2. The observations and proposals collected during the inquiry are taken into consideration by the project owner and by the authority competent to take the decision.

NOTE: These provisions apply to projects, plans, programs or other planning documents for which the order opening and organizing the public inquiry is published as of the first day of the sixth month after the publication of the decree in Council of State provided for in Article L. 123-19 of the Environmental Code."

The Public Inquiry is carried out within the framework of the impact study required to obtain a building permit for a ground-mounted photovoltaic power plant.

3.4. Regulations Applicable to the Implementation of a Photovoltaic Plant

The installation of photovoltaic devices is subject to several regulations (town planning code, building code, environmental code, electricity law...) and requires a certain number of prior steps depending on the type of installation. Since 2009, ground-mounted installations with a power of more than 250 kWp are subject to restrictive procedures in order to ensure that they have the least possible impact on the landscape, the environment and town planning.

3.4.1. Procedures for urban planning

Prior note: the installation of a photovoltaic device must be compatible with the town planning regulations in force (POS, PLU, national town planning regulations). In case of incompatibility, these documents must be modified. Building permit for any plant over 250 KWp

3.4.2. Procedures for the environment

Depending on its size and location, a photovoltaic installation is subject to several environmental procedures: Environmental impact assessment: ground-mounted installations with a capacity of more than 250 kWp are subject to an environmental impact assessment (Reference texts: decree 2009-1414 of November 19, 2009, articles R122-8 of the environmental code). Public inquiry: ground-mounted installations with a power of more than 250 kWp are subject to a public inquiry as part of the building permit procedure (Reference texts: decree 2009-1414 of 19 November 2009, article R.123 of the environmental code). Contact: Regional Direction of Ecology, Development and Housing (DREAL) of the location (Reference text: circular of December 18, 2009 framing the requirements to be met for ground-based power plants).

The latest ICPE authorization requests and the various biodiversity monitoring will be an important source of information.

3.4.3. Steps to take for electricity

The Procedure

In order to obtain the right to build and operate this photovoltaic power plant, ZBS Investments must follow the "call for tender" procedure of the Commission de Régulation de l'Energie (CRE). Within this framework, it is the candidates who propose a "purchase price" in €/kWh. The terms and conditions for the selection of applications and the commitments of the applicant are specified in the specifications. This call for tenders is established in application of the Energy Code:

- Section 3 of Chapter 1 of Book III of the Legislative Part
- Section 2 of Chapter 1 of Book III of the regulatory part.

3.4.4. Opinion on the Project

The notices will be inserted by the State services after instruction.

3.4.5. Procedures Concertation

Several awareness actions will be set up in order to make this project known to as many people as possible. ZBS Investments will take care to call the press in order to inform the public.

4. Communication Actions

- Press article
- Internet communication through the blog of the solar power plant of the commune
- Public meetings
- Project presentation leaflets

5. Concertation Actions

A consultation and information meeting with the inhabitants and the elected representatives will be jointly organized by the commune and ZBS Investments.

Posters will be put up in the town hall and in the commune. The elected representatives and ZBS Investments will also carry out a mass distribution of a letter inviting the inhabitants to participate in the consultation meetings.

6. Assessment of the consultation

This will give the ZBS Investments team an opportunity to answer the various questions on the choice of the project location, the development phases and, at the end of the meeting, to gather the support shared by a large majority of the members present.

7. Other Authorizations Necessary for the Realization of the Project

7.1. Land Clearing Authorization

The ground-mounted power plant project will in principle not be required to obtain a forest clearing permit. Compensation measures will be carried out within the framework of this authorization, i.e. the reforestation of certain plots of land if necessary.

7.2. Request for Derogation of Protected Species

Following the clearing authorization and the opinion of the Environmental Authority, a file will be implemented to respond to the instruction of a request for exemption from the protection of species in the context of this project.

As these are independent regulations, in addition to the issuance of this clearing authorization and the future building permit, the issuance of the derogation to the protection of species (which would require in this case an opinion of the National Council for the Protection of Nature) will be a prerequisite to any start of the project.