



Business Plan

SSI Energy Tanzania Ltd
Office 22, Slipway
Yacht Club Road
Mbasani Peninsula
Dar es Salaam
United Republic of Tanzania

Company registered in the United Republic of Tanzania No.132412

www.ssienergy.co.tz
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A Solar Securities Company

SSI Energy Tanzania Ltd (SSI) is a specialist developer of solar PV power stations.

1. The company is established to develop projects specifically under the EWURA Small Power Project Rules (The Rules) (Electricity Act)

The Rules specifically allow unsolicited proposals for projects up to 10MVA.

The first project is to be located at Buzwagi, Kahama.

The first Standardised Power Purchase Agreement (SPPA) under The Rules should be signed with TANESCO in 2020.

2. As part of the delivery process at Buzwagi, SSI will have to establish an Operations and Maintenance (O&M) company to support the operations at this first project. This separate company will be developed into a general Electrical Engineering and Service business that will specialize in sub-contract work for TANESCO and Facilities Management (FM) and it is intended that this company can be grown by acquisition.

3. Thereafter SSI will develop 10MVA solar PV power stations at Arusha, Kilimanjaro International Airport, Moshi and Tanga.

4. A further range of smaller projects will then be developed at Mwanza, Musoma, Ngara, Kasulu, Liwali, Tunduru and Loliondo.

5. As SSI gains experience from the process of development, construction and commissioning, and O&M, the company will begin to branch out from just delivering projects under The Rules and will offer projects to Industrial and Commercial customers.

a) The first range of customers will be the mining sector.

b) The second range of customers will be the Civil Aviation Authority for airport projects.

6. SSI will also seek to develop projects on Zanzibar and Mafia Island as opportunities appear and the extra costs can be managed.

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7. Once the first range of solar PV power stations and the O&M business is operational SSI will look to develop other specific businesses, namely Electric Vehicle (EV) Charging Stations and Data Centres.
- a) SSI anticipates that the first (EV) charging stations will be at airports to charge hire cars and taxis.
 - b) The first Data Centre is likely to be located at Buzwagi, Kahama.
 - c) SSI will also consider the supply and leasing of EVs in Tanzania.

SSI First Project at Kahama

This will be 12MWp (AC) and maximum 10MVA in order to comply with The Rules.

The project will use a Single Axis Tracker and Bifacial Solar Modules to maximise revenue.

The agreed tariff with TANESCO is US\$0.07 kWh (non inflationary).

The project will generate 2,300 kWh per kWp per year, being a total of 27,600,000 kWhs per year.

Turnover will therefore be US\$1,932,000 annually.

It is expected that the construction cost will be \$14,000,000.

SSI needs to determine the cost of finance, but in principle the project is profitable.

SSI will approach TIB Development Bank to inquire about local finance and available Renewable Energy Investment Programmes the bank offers.

SSI will also seek a major International Solar Industrial Partner to share development costs and provide sufficient Equity to fund construction.

POTENTIAL DATA CENTRE

AND ASSOCIATED

50 MWp SOLAR PV ELECTRIC GENERATOR

WITH BATTERY STORAGE

TO BE LOCATED AT

BUZWAGI, KAHAMA

1. SSI Energy Tanzania Limited (SSI) has considered the suitability of the Tailings Storage Facility (TSF) at Buzwagi for some years as an ideal location for a data centre
2. SSI and parent company, Solar Securities, is a developer of solar PV generators, with operations in UK, Netherlands and Tanzania, in each country we are developing a pipeline of projects
 - a. Solar Securities owns and operates 2 solar PV generators
 - i. 5 MWp in UK (also EPC Contractor)
 - ii. 2.5 MWp in Netherlands
3. Solar Securities, has personnel with relevant experience developing data centres in Europe
4. SSI is familiar with the Buzwagi mine site, having a 12 MWp solar PV project for TANESCO located in the buffer zone outside the mine wall
5. In SSI's opinion, the TSF site has the following beneficial characteristics:
 - a. Large c260 acres (sufficient for >50 MWp of solar PV generator)
 - b. Flat (ideal for solar PV)
 - c. Little other economic use after the mine is decommissioned = low cost
 - d. Fibre Optic Cable necessary for internet connection is available at the mine site and the main internet backbone is located at Tinde 62km distant
 - e. 220kV electricity interconnection at the Buzwagi TANESCO substation for backup power supply
 - f. The site is secure, the mine site is walled, and the TSF is 45m high, there is active security at the gate and systems and procedures in place to ensure security including a trained and experienced workforce
 - g. Technically skilled workforce available at Kahama
6. Data Centres require the following:

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- a. Telecommunications connectivity (fibre optic backed up by satellite coms)
 - b. Large electric power sources available locally at low cost (especially renewable sources)
 - c. Technically skilled workforce
7. SSI believes that the Buzwagi sites meets all these requirements
8. So far in 2020, there is no large independent data centre in Tanzania
9. SSI predicts there will be a increase in the demand for data centre capacity in Tanzania, and intends to meet this demand
- a. Government of Tanzania (GoT) policy to raise taxation from citizenry (most likely via mobile telecommunications banking and finance applications will lead to a National Security Requirement for increased capacity of Data Centres to be located in the jurisdiction, suggesting this project will meet with the approval of the GoT
 - i. Currently, there is limited Data Centre capacity in Tanzania
 - 1. National Internet Data Center (Dar es Salaam)
 - 2. TiGO (Dar es Salaam)
 - 3. Vodacom (Dar es Salaam, Mwanza, Dodoma, Arusha and Mbeya)
 - b. Local Mobile Telecommunications companies also will increasingly be required to offer enhanced data protection to their customers, meaning processing and storage of data within the jurisdiction
 - c. The growth of applications and the internet economy will further drive the demand for data processing and storage services
 - d. The growth of electric mobility will further drive the demand for data processing and storage services
 - e. The growth of 5G will drive the demand for data processing and storage services
10. SSI and its parent, Solar Securities, has relevant experience in-company for the development of data centres and the associated electric power generation infrastructure (solar PV)
11. SSI has relevant experience in Tanzania for the development of large projects
12. Detailed market research and feasibility work will be undertaken during 2021 to produce a business plan by end of December 2021

New Chapurwa Proposed Solar Project Site 265 acres

New Chapurwa Proposed Solar Project Site 265 acres

Buzwagi 220kV Substation

Original Buzwagi Site 138 acres

Legend

Google Earth

Image © 2007 Google
Map data © 2017 Maxar Technologies

1 km

