



**BUSINESS PLAN**

**FOR A**

**50 MW<sub>p</sub> PV SOLAR PLANT IN IRINGA DISTRICT**

Name of the Proponent:

**Solar Iringa Ltd.**

P.O. Box 307 Mwanza

Tanzania

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**Executive Summary**

Solar Iringa Ltd intends to develop and implement a Solar PV power plant in Tanzania. The nature of the business is the development, construction and operation of a 50 MWp Solar PV Farm selling electricity to the national grid under a Power Purchase Agreement (PPA) with the Tanzania Electric Supply Company Ltd. (TANESCO).

The proposed approach will support TANESCO in the electricity generation business while allowing the National utility to focus on the maintenance and efficiency of the electricity transmission and distribution businesses.

The proposed Project has the potential and enough availability of land to be upgraded to 100 MWp if this is of interest to TANESCO:

<b>Project Description</b>	
<b>Capacity</b>	41.9 MWac / 50MWp
<b>Solar Resources</b>	2.181 kWh/m <sup>2</sup> per year (2.314 kWh/kWp)
<b>Energy Yield</b>	115,69 GWh/y
<b>Location</b>	Kilambo village (Iringa district) Tanzania
<b>Land Area for Construction</b>	110 Ha (~2 Ha/MWp), fairly flat
<b>Technology</b>	Module: Bifacial, monocrystalline, n-type Heterojunction, Half cut (132cells) Structure: Single-axis tracker with 1 module in vertical
<b>Interconnection</b>	6,1 km from Tagamenda TANESCO Substation. Connection at 33kV level

**Off-taker**

PPA with TANESCO

The Project is a 49.81 MWp solar farm located at Kilambo Village (formerly part of Tagamenda village), Iringa Rural District, Iringa Region. The Solar Iringa Ltd already secured the land through an Option and Access Agreement signed by RP Global Holding Italy Srl (the majority shareholder of Solar Iringa Ltd) and the Village Council and identified landowners and countersigned by the Iringa District Legal Officer.

The proposed solar PV power plant site is located in Mseke B sub-village of Kilambo village, Luhota ward, Mlolo division, Iringa district council in Iringa district, Tanzania. The site lies at latitude 7°50'13.11"S and longitude 35°46'21.36"E at an altitude that ranges between 1,620 and 1,660 meters a.s.l. with slightly undulated but not complex terrain. The site is located along Iringa-Kilolo main road (about 1.1km to the south-west), approximately 7 km to the east off-TANZAM highway at Ipogolo centre. In addition, part of the proposed transmission corridor and the existing TANESCO's Tagamenda sub-station are located nearby Ipogolo centre within Iringa municipality.

The Solar farm will have a total generation capacity of 49.81 MWp (DC) and estimated energy yield of 113,351 MWh first year assuming single-axis tracker technology, mono-perc modules and string inverters. The power will be evacuated using a 33-kV Overhead line. The Solar farm is located 6.1 km from the TANESCO's substation of Iringa – Tagemenda and therefore provides very low costs for evacuation line.

Preliminary environmental and social impact assessments have already been carried out and no major impacts have been identified.

Solar Iringa Ltd is the Special Purpose Vehicle company set up by RP Global Group to develop, operate, manage and finance the Project.

RP Global is an independent power producer with a focus on wind, hydro, and solar power. The group comprises several subsidiaries assembled under the parent company RP Global Energy GmbH, with Headquarters in Vienna, Austria. All operating assets and developments are set up in special-purpose legal entities to ensure flexibility for financing and (co-)investment purposes. Joint group standards set by the Holding ensure quality, synergy and alignment of the business activity. Local country organization manage the country-specific opportunities within the given framework. The company is managed by a Board, consisting of the CEO Gerhard Matzinger, the CFO Jorge Eugenio Rodríguez García, and the CTO Igor Reščec.

**Chapter 1: Project Description**

In this Chapter, the Proponent describes the project details including the Project’s features, development work completed to date and information such as:

(a) Location of the Facilities:

The Proponent provides different maps showing the location and arrangement of the key facilities at the Project site.

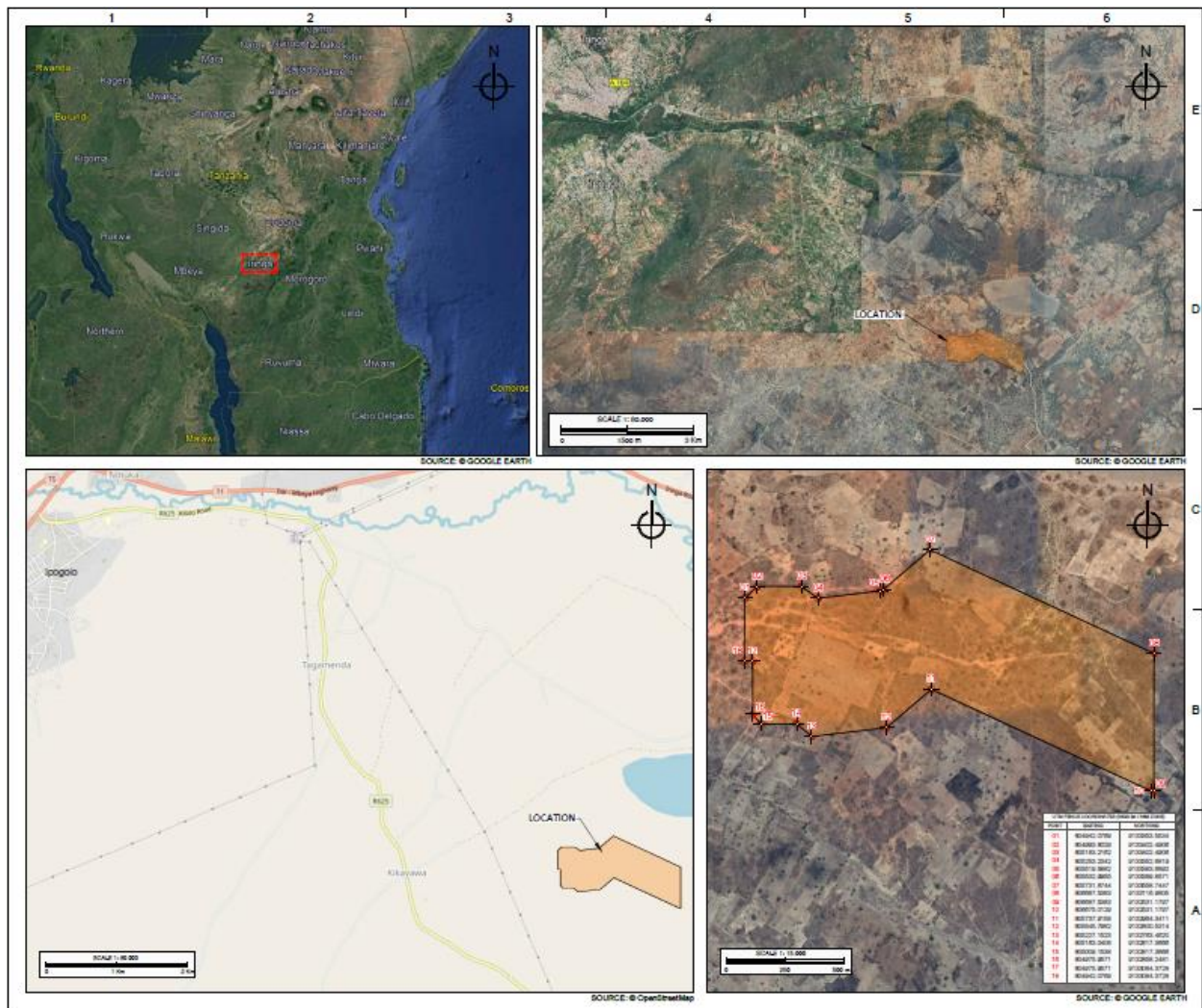


Figure 1: A01AE0158-IRI-DW-01-LOCATION 1 (Source: AFA)

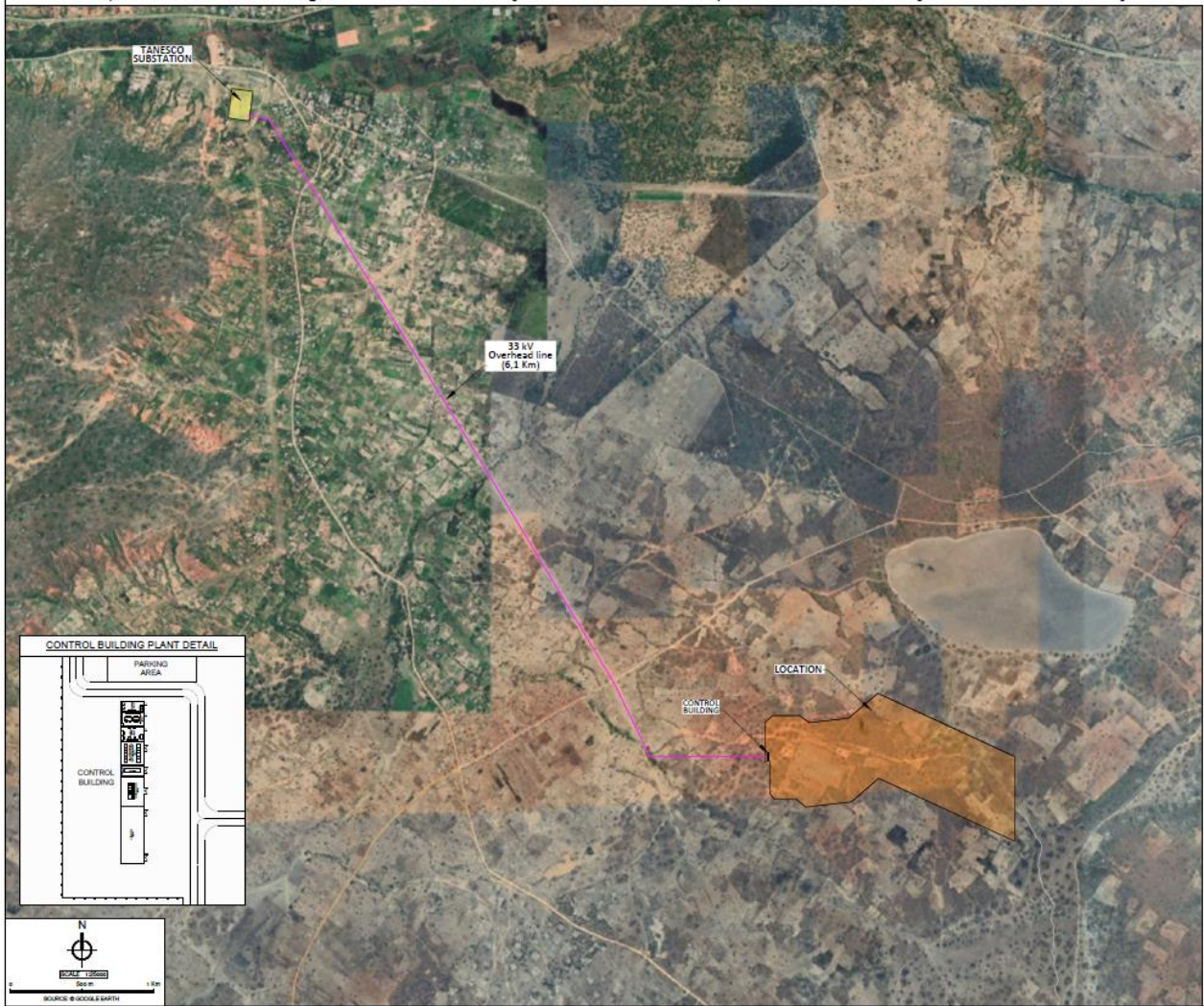


Figure 2: A02\_AE0158-IRI-DW-01-LOCATION 1 (Source: AFA)

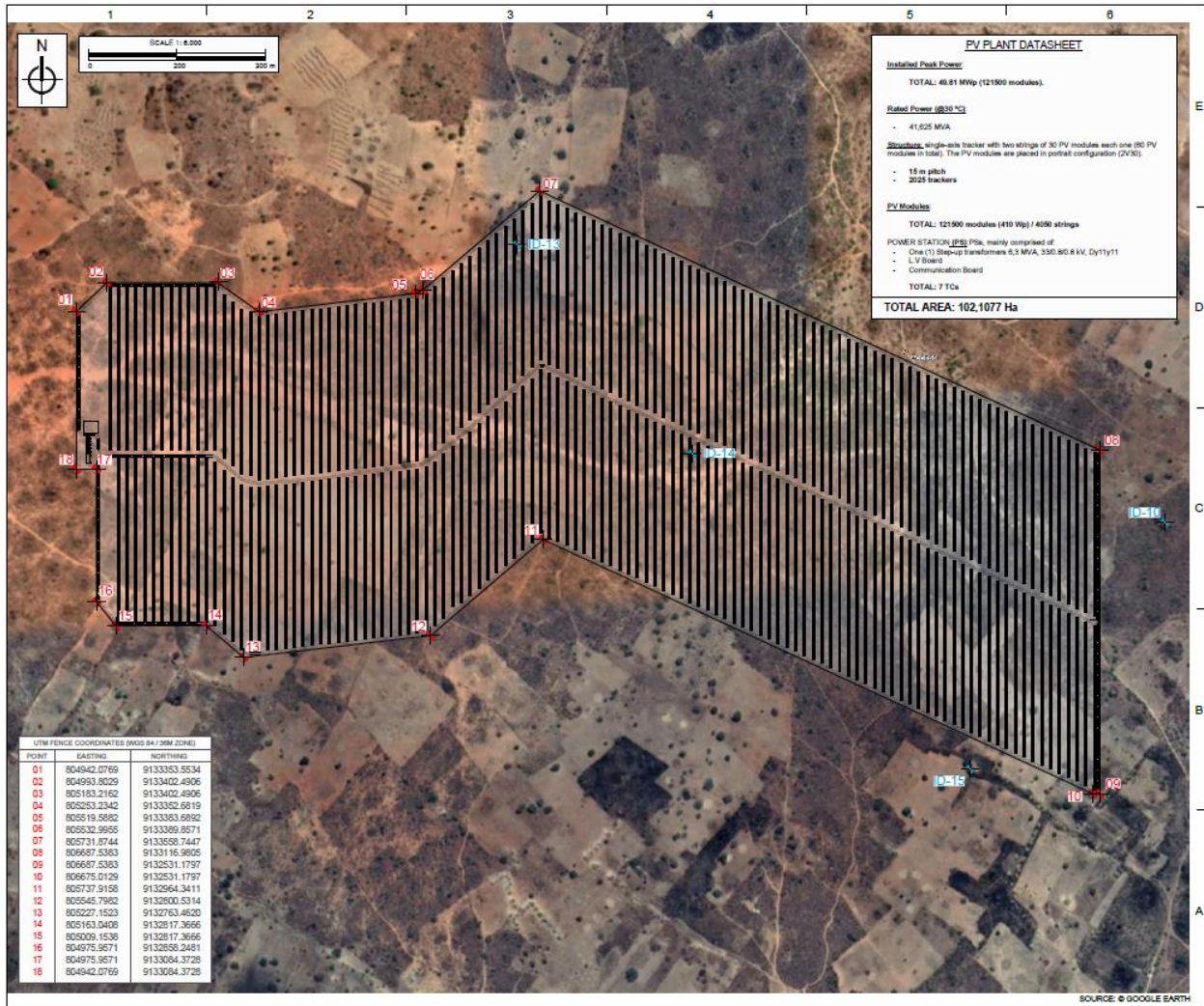


Figure 3: A04\_AE0158-IRI-DW-01-LOCATION 3 (Source: AFA)

(b) Project size, project area and in terms of power generation capability (MW):

The Project has a size of about 102 ha, a nominal power of 41,625 kWn and peak power of 49,815 kWp;

(c) General description, size, rating, number and manufacturer of generating units that will be used:

The proposed solar PV power plant in Iringa will typically be composed of several interrelated components, which are: the power plant with 700 Watt PV modules, inverter, transformer and electrical system, internal access roads (upgrading of

existing roads or construction of new roads), transmission cable (33-kV line) to the existing TANESCO Tagamenda substation (grid connection), a maintenance facility/administration center on-site, and associated ancillaries utilities such as water supply, drainage system, sanitation, and security systems.

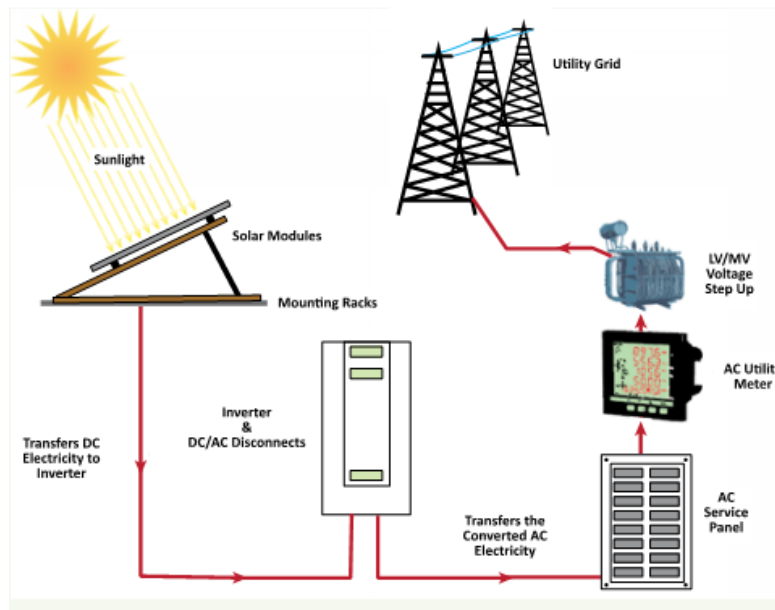


Figure 6: An overview of the solar PV power plant

### Solar PV modules

The solar PV modules convert solar radiation directly into electricity through the photovoltaic effect in a silent and clean process that requires no moving parts. The PV effect is a semiconductor effect whereby solar radiation falling onto the semiconductor (the solar PV cells) generates electron movement. The output from a solar PV cell is Direct Current (DC). A typical solar PV power plant contains many cells connected in modules and many modules in strings to produce the required DC power output. The general consideration is that a quality technology solar PV module is expected to keep more than 90% of its initial performance (useful life span) for about 25 to 30 years, whereby the accumulated module degradation starts to reduce significantly its performance. A conceptual design of the solar PV plant has been developed as part of a pre-feasibility study. It considers preliminary resource and yield

estimates and other site-specific requirements and constraints determined by an initial satellite-based solar resource assessment in Tanzania. The modules will be further improved during the feasibility study and detailed engineering design. The improved plant design fully accounts for the PV module to be used, tilting angle, mounting and tracking systems, inverters, and module arrangement. Key aspects such as shading, performance degradation rate, the climatic profile of the Iringa site (e.g., temperature and wind), and trade-offs between increased investment (e.g., for tracking) and energy yield estimations (one of the key parameters in determining the Project's viability), will be optimized in the plant's design.

#### *Modules mounting system*

Regarding the module mounting system, the solar PV modules installed at the site are expected to be mounted on sun-tracking frames. Mounting structures will typically be fabricated from steel or aluminum. The Proponent will commission a site-specific detailed structural design and specification report to suit the plant's site.

#### *Inverters*

The inverters installed at the site will primarily be used to convert DC electricity generated by the PV modules into Alternating Current (AC) electricity and adjust the produced energy with the grid characteristics (grid code) to allow the connection to the Tagamenda substation grid utility. Undoubtedly, this will be performed considering TANESCO's grid connection requirements. The inverter will be arranged in string configuration to enable maximum power tracking, fewer operation and maintenance costs, and skills requirements. The Proponent shall ensure that the solar PV modules and inverter conform to national statutory requirements and guidelines and are subject to the International Electrotechnical Commission (IEC) certification.

#### *Step-up transformer*

The output from the inverters generally requires a further step-up in voltage to reach the AC grid voltage level. The step-up transformer upgrades the output from the

inverters to the required grid voltage (for example, 25-kV, 33-kV, 38-kV, or 110-kV, depending on the grid connection point and TANESCO's standards).

#### *Transmission line and the grid connection interface*

After electricity generation at the power plant, it will be exported to the existing grid network at TANESCO's existing Tagamenda sub-station near the Ipogolo junction in Iringa municipality. The 6 km long grid connection transmission cable (likely an overhead cable) will be constructed from the site to the sub-station. The transmission cable (33-kV line) to the existing TANESCO's Tagamenda substation will use the existing wayleave from the site along the existing access road that links the Mseke B sub-village with the Iringa-Kilolo road. Using the existing wayleave will minimize or avoid further land acquisition, resettlement issues, and associated disruption of livelihoods, utilities, and other infrastructure. The substation will also have the required grid interface switchgear, such as circuit breakers (CBs) and disconnects to protect and isolate the PV power plant and metering equipment.

As Tanzania's sole transmission system operator, the Iringa solar PV power plant transmission line will be designed and constructed in collaboration with TANESCO. The overall design standards will be consistent with the existing transmission infrastructure operated by TANESCO and will comply with international best practices in electrical transmission infrastructure.

#### *Solar irradiation measurements and weather station*

The Proponent intends to install and operate a weather station to collect meteorological data on the site, including solar irradiation, to enable further development and design of the power plant. The station is now in Tanzania and will be installed on-site in September 2023.

The system includes:

- meteorological sensors;
- poles for the meteorological station;

- concrete footing of 1.00 x 1.00 m;
- lattice tower measuring at 3 m; 4.5 m;
- simple twist mesh perimeter fencing and height 2 m with 2 barbed wires.

The installation and operation of the weather station will be according to health and safety guidelines prescribed by the Tanzania Meteorological Authority (TMA), Occupational Health and Safety Authority (OSHA), International Electrotechnical Commission (IEC) and the International Finance Corporation (IFC).

The plant equipment characteristics are described in the following table:

Category	Description
<b>Project name</b>	Iringa solar PV power plant
<b>Location</b>	Kilambo village (Iringa district, Tanzania)
<b>Size</b>	41.9 MWac / 50 MWp
<b>Solar resource</b>	2,181 kWh/m <sup>2</sup> per year
<b>Energy yield</b>	115.69 GWh/y (P50)
<b>PV module</b>	Recom RCM-700-8DBHM  String configuration
<b>Inverter</b>	Huawei SUN2000-330KTL
<b>Tracker</b>	Single-axis tracker (Max/min tilt: 55°/-55°, Pitch distance: 9 m, Collector width: 2.38 m, and X1 strings per tracker row)
<b>Land area for survey</b>	320 ha
<b>Land size for construction</b>	~110 ha (2.2 ha/MWp), fairly flat

<b>Technology</b>	Bifacial n-type HTJ technology, (132 cells) 700 Watt modules, single-axis tracking
<b>Grid interconnection</b>	6 km from Tagamenda TANESCO substation. Connection at 33-kV
<b>Existing sub-station</b>	Voltage 220-kV, intended upgrade to 400-kV  Equipped with 2 x 220/33-kV 22.5 MVA transformers
<b>Ready to build</b>	Q2 2024
<b>Expected COD</b>	Q2 2025
<b>Offtaker</b>	PPA with TANESCO

(d) Annual minimum and maximum generation level capacity delivered:

Assuming a Long-term degradation (LTD) of 0.45% and an Internal unavailability of 0.5%, and Grid schedule and unscheduled unavailability of 1.5%, the 1st-year Performance Ratio (the indicative number about the actual energy produced at the site compared to the amount energy could have been generated based on the amount of solar energy resource the site has received for a particular period) is equivalent to 80.2%, the 1<sup>st</sup>-year equivalent hours are 2,275 MWh/MWp, with a 1<sup>st</sup>-year energy yield of 115,690 MWh;

(e) Proposed interconnection point with the TANESCO grid and any new network facilities that will be required:

The proposed interconnection point with TANESCO is located at the Iringa/Tagamenda Substation. The power will be evacuated using a dedicated 33-kV double circuit Overhead line. The Solar farm is located 6.1 km from the TANESCO's substation of Iringa and therefore provides very low costs for evacuation line. Adjustments at the Iringa Substation are required to allow the

interconnection of the Project on the 33-kV busbar, which will be detailed in Chapter 7: Interconnection Plan. The following map shows the location of the Interconnection point.

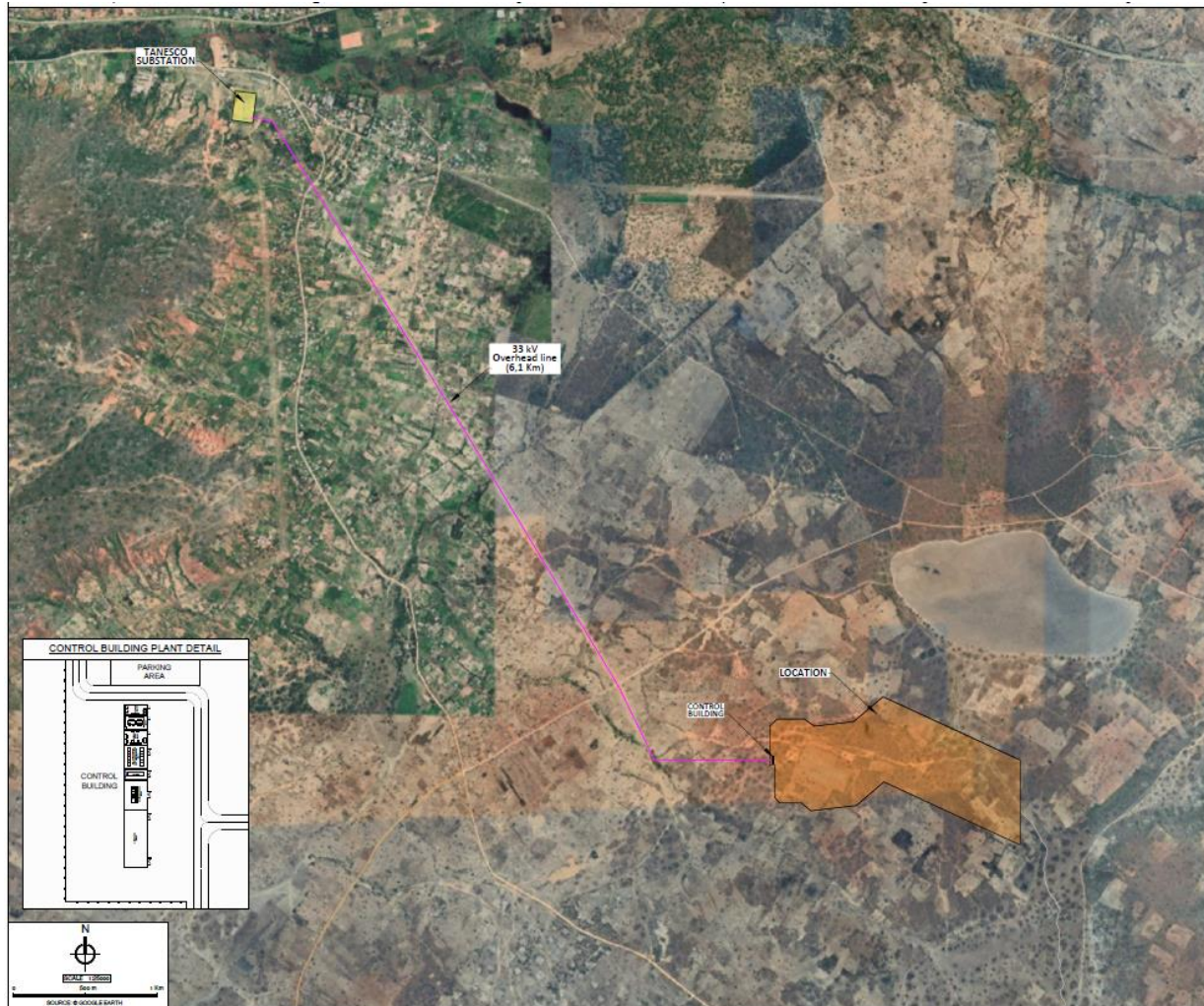


Figure 4: A02\_AE0158-IRI-DW-01-LOCATION (Source: AF)

(f) Schedule for permitting, construction, and expected date of commercial operation:

Preliminary environmental and social impact assessments have already been carried out and no major impacts have been identified. The Project is currently

developing, and all permits and approvals shall be obtained during the first half of 2025.

(g) Response time of the power plant upon dispatch;

The PV Plant can response in less than 0.5 s depending on the communication system with the Grid Operator (in fact the inverters can respond in less than 20 ms).

The reaction time, in automatic mode, the PV plant can respond in less than 0.5 s once the order has been received. The total time depends on the order and the agreement of a ramp down with the operator.

**Chapter 2: Construction and Operation Costs**

*Construction Costs*

The total cost of the construction of the Project is USD 38.388.978. Below is a detailed breakdown of the construction cost by major project components.

Item description	Costs (USD)
Development Costs	1.147.210
PV Modules	19.250.000
Inverters, SCADA, Cablings	4.898.014
Electrical/Mechanical Works	4.400.000
Civil Works	2.414.390
Grid Connection	781.000
EPC Services	1.541.245
Additional Financial Costs	3.957.119
<b>Total</b>	<b>38.388.978</b>

*Opex Costs*

The Operational Expenditure at year 1 is USD 892.271/year.

**Chapter 3: Sources of Finance**

The Financing Plan is composed of the following sources of financing:

- Equity 27,80%: Total amount: 10,67 MUSD.
- Debt 72,20%: Total amount: 27,71 MUSD.

These assumptions are subject to the signing of a bankable PPA with TANESCO.

#### **Chapter 4: Financial Projections**

The financial projections predict the Project's upcoming finances. They project future numbers, like costs, revenues, debt, cash flow, etc.

It uses a balance sheet, cash flow, and income statement to make the projections. In the following pages the three mentioned are presented.

a) Cash Flow

Cash flow projections help understand the Project cash needs. They show the amount of money coming in from operations and going out in expenses.

Cash Flow																											
USD M	Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
	Period	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Project Revenues	-	5,47	5,61	5,76	5,90	6,05	6,21	6,36	6,52	6,69	6,86	7,03	7,21	7,39	7,58	7,77	7,97	8,17	8,38	8,59	8,81	9,04	9,27	9,50	9,74	9,99	
Opex	-	(0,82)	(0,84)	(0,87)	(0,89)	(0,92)	(0,95)	(0,98)	(1,00)	(1,03)	(1,07)	(1,10)	(1,13)	(1,16)	(1,20)	(1,23)	(1,27)	(1,31)	(1,35)	(1,39)	(1,43)	(1,47)	(1,51)	(1,56)	(1,60)	(1,65)	
Taxes	-	(0,00)	(0,00)	(0,00)	(0,00)	(0,47)	(0,55)	(0,65)	(0,73)	(0,81)	(0,88)	(0,96)	(1,04)	(1,17)	(1,25)	(1,34)	(1,43)	(1,52)	(1,61)	(1,70)	(1,75)	(1,81)	(1,86)	(1,92)	(1,97)	(2,03)	
Working Capital	-	(0,81)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,02)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,01)	(0,00)
<b>Net Cash Flow</b>	-	<b>3,84</b>	<b>4,75</b>	<b>4,87</b>	<b>4,99</b>	<b>4,65</b>	<b>4,69</b>	<b>4,72</b>	<b>4,77</b>	<b>4,83</b>	<b>4,90</b>	<b>4,96</b>	<b>5,02</b>	<b>5,05</b>	<b>5,12</b>	<b>5,19</b>	<b>5,26</b>	<b>5,34</b>	<b>5,42</b>	<b>5,50</b>	<b>5,62</b>	<b>5,75</b>	<b>5,88</b>	<b>6,02</b>	<b>6,16</b>	<b>6,30</b>	
Capex	(32,05)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Project Cash Flow after Taxes</b>	<b>(32,05)</b>	<b>3,84</b>	<b>4,75</b>	<b>4,87</b>	<b>4,99</b>	<b>4,65</b>	<b>4,69</b>	<b>4,72</b>	<b>4,77</b>	<b>4,83</b>	<b>4,90</b>	<b>4,96</b>	<b>5,02</b>	<b>5,05</b>	<b>5,12</b>	<b>5,19</b>	<b>5,26</b>	<b>5,34</b>	<b>5,42</b>	<b>5,50</b>	<b>5,62</b>	<b>5,75</b>	<b>5,88</b>	<b>6,02</b>	<b>6,16</b>	<b>6,30</b>	
Equity + Sub Debt	9,74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Debt	25,31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Cash flow available for Debt Service</b>	<b>3,01</b>	<b>3,84</b>	<b>4,75</b>	<b>4,87</b>	<b>4,99</b>	<b>4,65</b>	<b>4,69</b>	<b>4,72</b>	<b>4,77</b>	<b>4,83</b>	<b>4,90</b>	<b>4,96</b>	<b>5,02</b>	<b>5,05</b>	<b>5,12</b>	<b>5,19</b>	<b>5,26</b>	<b>5,34</b>	<b>5,42</b>	<b>5,50</b>	<b>5,62</b>	<b>5,75</b>	<b>5,88</b>	<b>6,02</b>	<b>6,16</b>	<b>6,30</b>	
Financial expenses	(1,41)	(2,15)	(2,08)	(1,99)	(1,90)	(1,80)	(1,70)	(1,59)	(1,47)	(1,35)	(1,23)	(1,10)	(0,81)	(0,69)	(0,56)	(0,43)	(0,29)	(0,14)	-	-	-	-	-	-	-	-	
Repayment of Senior Debt	-	(0,54)	(1,07)	(1,13)	(1,18)	(1,24)	(1,30)	(1,36)	(1,42)	(1,49)	(1,56)	(1,64)	(1,71)	(1,80)	(1,89)	(1,98)	(2,08)	(1,90)	-	-	-	-	-	-	-	-	
Changes in DSRRA	(1,60)	-	0,04	0,02	0,02	0,02	0,02	0,02	0,03	0,02	0,03	0,11	0,02	0,02	0,02	0,02	0,08	1,13	-	-	-	-	-	-	-	-	
<b>Investor Cash Flow</b>	<b>-</b>	<b>1,15</b>	<b>1,63</b>	<b>1,76</b>	<b>1,93</b>	<b>1,63</b>	<b>1,72</b>	<b>1,80</b>	<b>1,90</b>	<b>2,01</b>	<b>2,13</b>	<b>2,33</b>	<b>2,52</b>	<b>2,57</b>	<b>2,68</b>	<b>2,80</b>	<b>2,97</b>	<b>4,43</b>	<b>5,42</b>	<b>5,50</b>	<b>5,62</b>	<b>5,75</b>	<b>5,88</b>	<b>6,02</b>	<b>6,16</b>	<b>6,30</b>	

b) Income Statement

The income statement summarizes how much money the Project made yearly. It is also known as the Profit and Loss statement and provides a quick snapshot of a Project's financial health.

Income Statement																											
USD M	Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
	Period	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	18	19	20	21	22
Revenues	-	5,47	5,61	5,76	5,90	6,05	6,21	6,36	6,52	6,69	6,86	7,03	7,21	7,39	7,58	7,77	7,97	8,17	8,38	8,59	8,81	9,04	9,27	9,50	9,74	9,99	
O&M Costs	-	(0,82)	(0,84)	(0,87)	(0,89)	(0,92)	(0,95)	(0,98)	(1,00)	(1,03)	(1,07)	(1,10)	(1,13)	(1,16)	(1,20)	(1,23)	(1,27)	(1,31)	(1,35)	(1,39)	(1,43)	(1,47)	(1,51)	(1,56)	(1,60)	(1,65)	
<b>EBITDA</b>	-	<b>4,66</b>	<b>4,77</b>	<b>4,89</b>	<b>5,01</b>	<b>5,13</b>	<b>5,26</b>	<b>5,39</b>	<b>5,52</b>	<b>5,66</b>	<b>5,79</b>	<b>5,94</b>	<b>6,08</b>	<b>6,23</b>	<b>6,39</b>	<b>6,54</b>	<b>6,70</b>	<b>6,87</b>	<b>7,04</b>	<b>7,21</b>	<b>7,39</b>	<b>7,57</b>	<b>7,75</b>	<b>7,94</b>	<b>8,14</b>	<b>8,34</b>	
Depreciation	-	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	(1,36)	
<b>EBIT</b>	-	<b>3,29</b>	<b>3,41</b>	<b>3,53</b>	<b>3,65</b>	<b>3,77</b>	<b>3,90</b>	<b>4,02</b>	<b>4,16</b>	<b>4,29</b>	<b>4,43</b>	<b>4,57</b>	<b>4,72</b>	<b>4,87</b>	<b>5,02</b>	<b>5,18</b>	<b>5,34</b>	<b>5,51</b>	<b>5,67</b>	<b>5,85</b>	<b>6,02</b>	<b>6,21</b>	<b>6,39</b>	<b>6,58</b>	<b>6,78</b>	<b>6,98</b>	
Financial Expenses	-	(2,52)	(2,40)	(2,25)	(2,09)	(1,92)	(1,74)	(1,59)	(1,47)	(1,35)	(1,23)	(1,10)	(0,81)	(0,69)	(0,56)	(0,43)	(0,29)	(0,14)	-	-	-	-	-	-	-	-	
<b>Profit Before Taxes</b>	-	<b>0,78</b>	<b>1,01</b>	<b>1,27</b>	<b>1,55</b>	<b>1,84</b>	<b>2,15</b>	<b>2,44</b>	<b>2,68</b>	<b>2,94</b>	<b>3,20</b>	<b>3,48</b>	<b>3,91</b>	<b>4,18</b>	<b>4,46</b>	<b>4,75</b>	<b>5,05</b>	<b>5,36</b>	<b>5,67</b>	<b>5,85</b>	<b>6,02</b>	<b>6,21</b>	<b>6,39</b>	<b>6,58</b>	<b>6,78</b>	<b>6,98</b>	
Tax	-	(0,12)	(0,37)	(0,38)	(0,45)	(0,53)	(0,61)	(0,70)	(0,77)	(0,84)	(0,92)	(1,00)	(1,11)	(1,21)	(1,30)	(1,38)	(1,47)	(1,56)	(1,67)	(1,73)	(1,78)	(1,84)	(1,89)	(1,95)	(2,00)	(2,06)	
<b>Net Profit</b>	-	<b>0,66</b>	<b>0,64</b>	<b>0,90</b>	<b>1,10</b>	<b>1,31</b>	<b>1,54</b>	<b>1,74</b>	<b>1,92</b>	<b>2,10</b>	<b>2,28</b>	<b>2,48</b>	<b>2,80</b>	<b>2,97</b>	<b>3,17</b>	<b>3,37</b>	<b>3,58</b>	<b>3,80</b>	<b>4,01</b>	<b>4,12</b>	<b>4,24</b>	<b>4,37</b>	<b>4,50</b>	<b>4,64</b>	<b>4,77</b>	<b>4,91</b>	

c) Balance Sheet

The financial situation of the Project can be assessed using a balance sheet. The items that make up a balance sheet are:

Assets – These are the Project’s material possessions with monetary, material, or inventory value.

Liabilities – A Project’s liabilities are pending debts, accounts payable, or loans.

Balance Sheet																												
USD M	Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	
	Period	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	17	17	17	18	19	20	21	22	
<b>Fixed assets</b>		<b>34,05</b>	<b>32,69</b>	<b>31,33</b>	<b>29,96</b>	<b>28,60</b>	<b>27,24</b>	<b>25,88</b>	<b>24,52</b>	<b>23,15</b>	<b>21,79</b>	<b>20,43</b>	<b>19,07</b>	<b>17,71</b>	<b>16,34</b>	<b>14,98</b>	<b>13,62</b>	<b>12,26</b>	<b>10,90</b>	<b>9,53</b>	<b>8,17</b>	<b>6,81</b>	<b>5,45</b>	<b>4,09</b>	<b>2,72</b>	<b>1,36</b>	-	
Fixed Assets		34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05	34,05
Accumulated Depreciation		-	1,36	2,72	4,09	5,45	6,81	8,17	9,53	10,90	12,26	13,62	14,98	16,34	17,71	19,07	20,43	21,79	23,15	24,52	25,88	27,24	28,60	29,96	31,33	32,69	34,05	
<b>Current Assets</b>		<b>1,60</b>	<b>3,64</b>	<b>2,50</b>	<b>2,50</b>	<b>2,50</b>	<b>2,49</b>	<b>2,49</b>	<b>2,49</b>	<b>2,50</b>	<b>2,50</b>	<b>2,42</b>	<b>2,43</b>	<b>2,45</b>	<b>2,46</b>	<b>2,47</b>	<b>2,43</b>	<b>1,33</b>	<b>1,37</b>	<b>1,40</b>	<b>1,44</b>	<b>1,47</b>	<b>1,51</b>	<b>1,55</b>	<b>1,59</b>	<b>2,68</b>		
Receivables		-	0,89	0,91	0,94	0,96	0,99	1,01	1,04	1,06	1,09	1,12	1,15	1,17	1,20	1,23	1,27	1,30	1,33	1,37	1,40	1,44	1,47	1,51	1,55	1,59	1,63	
DSRA		1,60	1,60	1,56	1,55	1,52	1,50	1,48	1,46	1,43	1,41	1,38	1,28	1,26	1,24	1,23	1,21	1,13	-	-	-	-	-	-	-	-	-	
Cash		0,00	1,15	0,02	0,01	0,01	0,01	0,00	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	(0,00)	1,05	
<b>TOTAL ASSETS</b>		<b>35,65</b>	<b>36,33</b>	<b>33,82</b>	<b>32,46</b>	<b>31,10</b>	<b>29,74</b>	<b>28,37</b>	<b>27,01</b>	<b>25,65</b>	<b>24,29</b>	<b>22,93</b>	<b>21,49</b>	<b>20,14</b>	<b>18,79</b>	<b>17,44</b>	<b>16,09</b>	<b>14,69</b>	<b>12,23</b>	<b>10,90</b>	<b>9,57</b>	<b>8,25</b>	<b>6,92</b>	<b>5,59</b>	<b>4,27</b>	<b>2,95</b>	<b>2,68</b>	
<b>Shareholder Funds</b>		<b>2,44</b>	<b>3,10</b>	<b>3,74</b>	<b>4,63</b>	<b>5,74</b>	<b>7,05</b>	<b>8,59</b>	<b>9,04</b>	<b>9,06</b>	<b>9,14</b>	<b>9,29</b>	<b>9,44</b>	<b>9,72</b>	<b>10,12</b>	<b>10,60</b>	<b>11,17</b>	<b>11,79</b>	<b>11,16</b>	<b>9,75</b>	<b>8,37</b>	<b>7,00</b>	<b>5,61</b>	<b>4,23</b>	<b>2,85</b>	<b>1,46</b>	<b>1,12</b>	
Shareholder's Equity		2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	2,44	
Pending Results		-	-	0,66	1,30	2,20	3,30	4,61	4,99	4,89	4,81	4,78	4,76	4,74	4,97	5,27	5,65	6,07	5,37	3,85	2,37	0,88	(0,62)	(2,12)	(3,62)	(5,13)	(5,70)	
Result of the Year		-	0,66	0,64	0,90	1,10	1,31	1,54	1,61	1,73	1,89	2,07	2,24	2,55	2,71	2,90	3,09	3,29	3,36	3,46	3,57	3,68	3,79	3,91	4,03	4,16	4,39	
<b>Long Term Liabilities</b>		<b>33,21</b>	<b>33,04</b>	<b>29,85</b>	<b>27,55</b>	<b>25,04</b>	<b>22,31</b>	<b>19,35</b>	<b>17,49</b>	<b>16,06</b>	<b>14,57</b>	<b>13,01</b>	<b>11,37</b>	<b>9,66</b>	<b>7,86</b>	<b>5,97</b>	<b>3,98</b>	<b>1,90</b>	-	-	-	-	-	-	-	-	-	
Shareholder's Loan		7,91	8,27	6,16	4,99	3,66	2,17	0,51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Senior Debt		25,31	24,77	23,70	22,57	21,38	20,14	18,84	17,49	16,06	14,57	13,01	11,37	9,66	7,86	5,97	3,98	1,90	-	-	-	-	-	-	-	-	-	
<b>Current Liabilities</b>		<b>-</b>	<b>0,19</b>	<b>0,23</b>	<b>0,28</b>	<b>0,32</b>	<b>0,38</b>	<b>0,43</b>	<b>0,48</b>	<b>0,53</b>	<b>0,58</b>	<b>0,63</b>	<b>0,68</b>	<b>0,76</b>	<b>0,82</b>	<b>0,88</b>	<b>0,94</b>	<b>1,00</b>	<b>1,07</b>	<b>1,15</b>	<b>1,20</b>	<b>1,25</b>	<b>1,31</b>	<b>1,36</b>	<b>1,43</b>	<b>1,49</b>	<b>1,56</b>	
<b>TOTAL LIABILITIES</b>		<b>35,65</b>	<b>36,33</b>	<b>33,82</b>	<b>32,46</b>	<b>31,10</b>	<b>29,74</b>	<b>28,37</b>	<b>27,01</b>	<b>25,65</b>	<b>24,29</b>	<b>22,93</b>	<b>21,49</b>	<b>20,14</b>	<b>18,79</b>	<b>17,44</b>	<b>16,09</b>	<b>14,69</b>	<b>12,23</b>	<b>10,90</b>	<b>9,57</b>	<b>8,25</b>	<b>6,92</b>	<b>5,59</b>	<b>4,27</b>	<b>2,95</b>	<b>2,68</b>	

**Chapter 5: Site and Environmental Permitting Plans**

Section 5.1 – Permits and Approvals Scheduling

The table below identifies which consents, permits, clearances and approvals would be required or not required for the Project to be constructed and operated. If a permit has already been applied for, the date that the permit was applied for is indicated, and the date that the permit is likely to be issued is in the column labelled “Expected Receipt”.

S/N	Type of Permit/license	Date Applied	Status	Expected Receipt Date
1	TCAA, confirmation from the Civil Aviation Authority that no such consent is necessary.	6/11/2019	Received	
2	ESIA Certificate NEMC	20/12/2022		Q2 2025
3	Generation License EWURA	-	To apply once the Plant is on the construction phase	Before Q4 2025
4	BRELA registration	-	Received	
5	Business License	-	Received	
6	Taxpayer registration number	-	Received	
7	TIC Certificate of Incentives	-	Applied	

<b>8</b>	Certificate of land acquisition (Right of Occupancy)	-	To apply on Q4 2023	Q2 2024
<b>9</b>	Planning/land use consent/land use authorization	-	To apply on Q1 2024	Q2 2024
<b>10</b>	Power generation and transmission licence	-	To apply on Q2 2024	Q3 2024
<b>11</b>	Grid connection permit/Approval of the overhead transmission route from site to Tagamenda sub-station	-	To apply on Q1 2024	Q2 2024
<b>12</b>	Transit/transportation permit (abnormal load/heavy equipment)	-	To apply on Q3 2024	Q4 2024
<b>13</b>	Road(s) construction permit/approvals	-	To apply on Q3 2024	Q4 2024
<b>14</b>	Building permit: Obtain permission to commence construction works from Iringa District	-	To apply on Q3 2024	Q4 2024

<b>15</b>	Water use permit from Rufiji Basin Water Board	-	To apply on Q2 2024	Q3 2024
<b>16</b>	Borehole drilling permit from Rufiji Basin Water Board & Rural Water Supply and Sanitation Agency (RUWASA)	-	To apply on Q2 2024	Q3 2024
<b>17</b>	Fire and Rescue Certificate	-	To apply on Q2 2024	Q3 2024
<b>18</b>	Certificate of Registration Workplace	-	To apply on Q2 2024	Q3 2024
<b>19</b>	Mining license (extraction of raw materials for construction - quarries)	-	To apply on Q2 2024	Q3 2024
<b>20</b>	Importation permits	-	To apply on Q2 2024	Q3 2024

Solar Iringa Ltd will obtain all permits required to undertake the Project. This basically will include NEMC, TRA, TANESCO, Local Government Councils, etc. For each permit indicated in the above table, all the required documentation will be provided to the relevant authority. The Project is likely to receive all the

permit, license and approval as the Project will be beneficial for the national, and local community. Strict guidelines to adhere to the National and International standards shall be followed.

#### Section 5.2 – Zoning and Rights of Way (RoW)

The Proponent provides specific information for the project site as identified below:

##### (a) on maps, drawings, and other attachments:

*(i) list any new rights-of-way required for the Project for access roads or electric transmission lines:*

The proposed access road according to the Feasibility Study attached to this proposal starts at UTM Coordinates H36; X=802818m E, Y=9133030m S from Ipogolo-Ndiwili dirt local road.

The first section of this access runs between several houses with narrow dirt road sections and turns with a small radius of curvature. Because of this, and in order to facilitate the transportation of the equipment and materials to the sites, it would be necessary to perform several adaptations in this access. The second section of this access road is a dirt road that runs between trees and undergrowth with slight slopes and turns with a small radius of curvature until the site of Project.

The following figure shows the overall layout of the preferred access road. The first section from mark A to mark C is a Public road, while the second section from mark C to mark D will require to obtain right-of-way from the local landowners.



*Figure 5: North Access Road Layout (Source: AFA and Google Earth)*

The interconnection of the PV plant with the TANESCO facilities will be through a 33-kV overhead line (OHL) that is about 6.11 km long. The OHL layout will be parallel to an existing 220-kV and 33-kV line, as shown in the figure below:

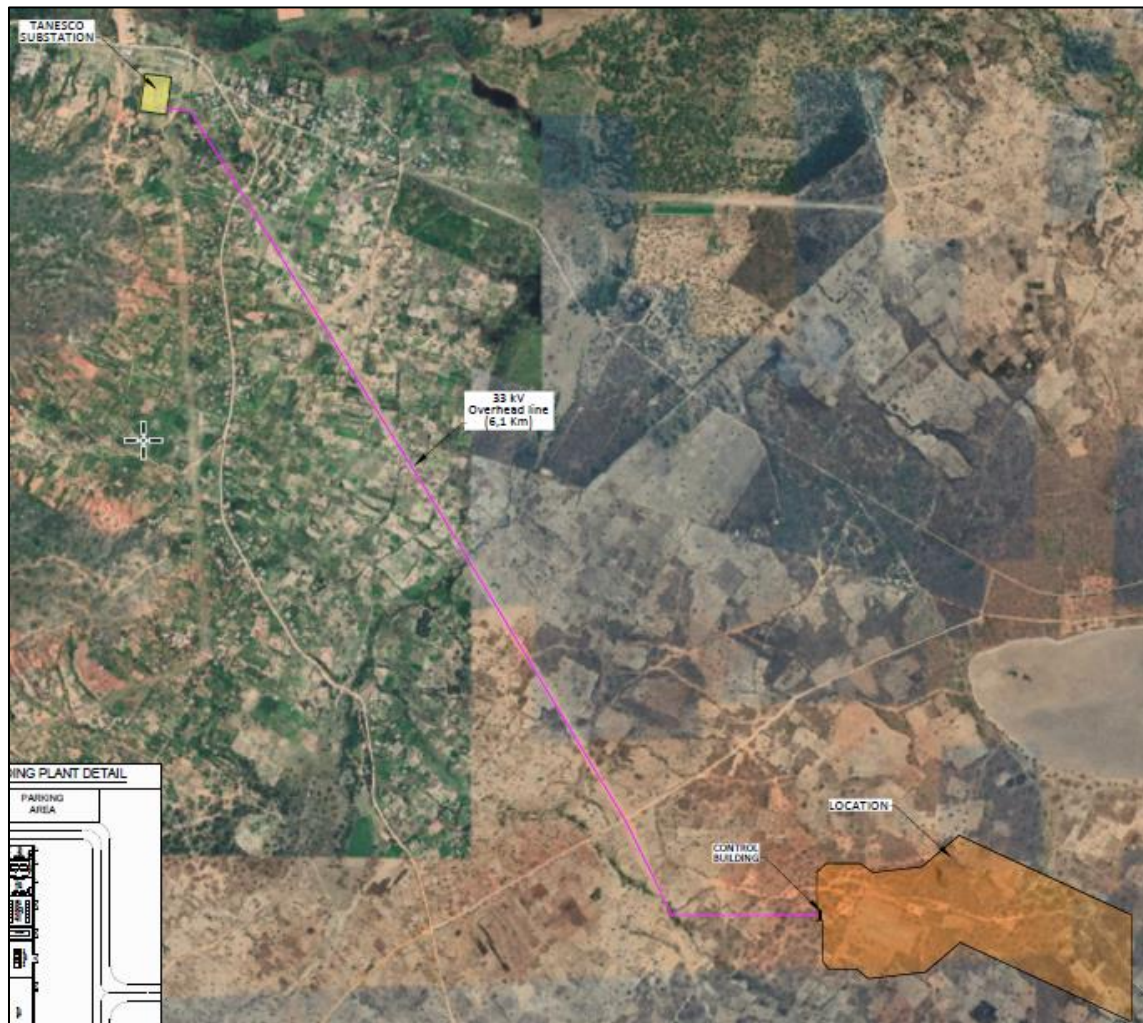


Figure 6: AE0158-IRI-DW-01-LOCATION (Source: AFA)

According to the proposed layout, only a small portion of the OHL will be outside of the TANESCO corridor and for this small portion, new rights-of-way will be required from the local landowners.

*(ii) identify the total area of wetlands or other special environmental zones on the proposed site or rights-of-way before and after construction and the area disturbed, lost, or converted during construction:*

Reconnaissance survey revealed that the site is not located within, or nearby wetlands or other special environmental zones/sensitive areas such as state lands (including submerged lands), coastal zones, wildlife parks, public parks, or critical habitats for endangered species. Ruaha National Park is located approximately 150 km from the site (via Iringa-Msembe road), and Kilombero Nature Forest Reserve is about 90 km away via Iringa-Kilolo road.

*(iii) show all portions of the proposed site or rights-of-way:*

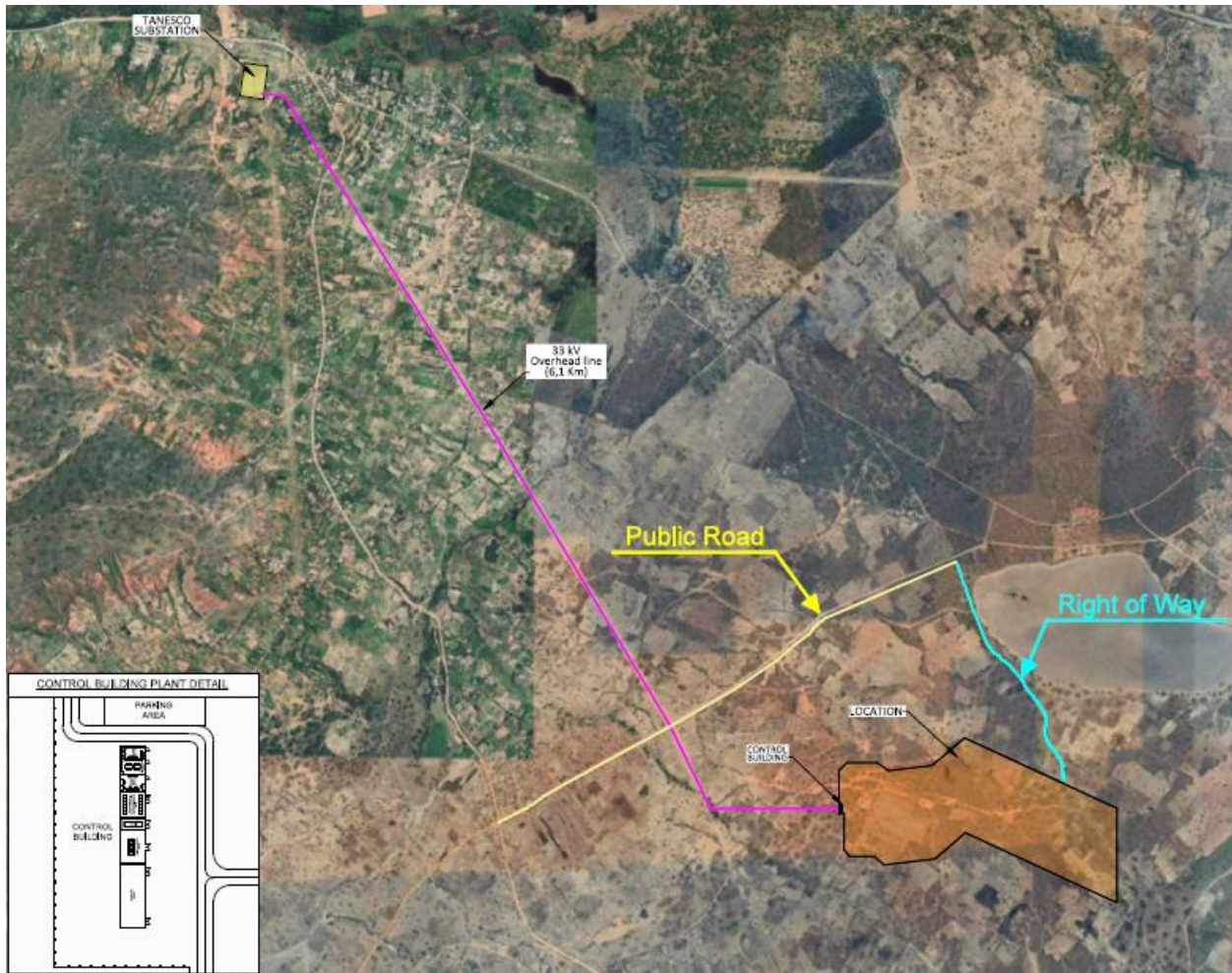


Figure 7: A03\_AE0158-IRI-DW-01-LOCATION 2 (Source: AFA)

(b) provide evidence that the existing zoning for the site is compatible with the proposed use and, if not, provide a plan of action that Proponent shall adopt for changing the zoning:

The proposed solar farm site and the surrounding area has been earmarked as farming and livestock grazing area. The main adjacent land uses are smallholder farming mainly agriculture (seasonal crops especially maize and beans) and livestock grazing. The technical details regarding existing Village Land Use Plan will be further investigated during detailed baseline studies phase through engagement with the District Land Department, village council, communities and other key stakeholders. Kilambo village enjoyed the USAID's Tanzania Land Tenure Assistance activity, that included land formalization and preparation of the village land use plans in selected villages along SAGCOT corridor: hence is easier for the Solar Iringa Ltd to understand the ownerships of plots and boundaries of the village, avoiding the risk of potential future conflicts. Therefore, the village has a land use planning and all individuals with land parcels in the solar farm site have Certificates of Customary Rights of Occupancy (CCROs). The village leaders pointed out that the area has been earmarked for farming and grazing activities, no new private buildings are allowed to be constructed in the selected area, hence the zoning is fully compatible with the PV Solar project construction, once Solar Iringa Ltd will acquire the land, after compensation of it according to the Tanzanian land laws.

(c) provide evidence that environmental compliance is feasible and requisite environmental permits are likely to be obtained in a timely manner. If the proposed site or rights of way has any environmental impacts, indicate mitigation measures planned, their estimated costs, schedules for completion and status of reviews by appropriate government agencies:

The ESIA Scoping Study, together with EIA ToR, were submitted to NEMC on the December 2022 has identified a number of issues pertaining to the proposed 50 MW solar PV power plant project. NEMC released a Registration Letter on January 2023 approving the registration and assigning an application reference number for further reference. The preliminary issues/impacts that have been presented in all phases of the Project, none of them are considered to be too severe to make their amelioration impossible, and the potential impacts associated with the proposed development are of a nature and extent that can be avoided, minimized, limited and eliminated by the application of appropriate mitigation measures. In view of the above findings, the proposed project activities will have manageable negative impacts on the biophysical and social-economic environments, provided that the proposed Environment and Social Management Plan (ESMP) and the Proposed Environmental Monitoring Plan (EMP) are appropriately implemented by the Solar Iringa Ltd. The ESMP provides a way forward for implementation of the proposed mitigation and enhancement measures. The EMP presents what has to be monitored during preconstruction, construction and implementation phases. The estimated costs for implementing the mitigation measures as well as monitoring have been shown in the Scoping report though they are just preliminary indicative figures based on consultant's informed judgment.

Besides, the identified environmental, socio-economic and cultural issues will be investigated thoroughly in the upcoming stages (detailed baseline studies) and impacts assessment. All new issues that will be observed later will be fully incorporated into the final ESIA assessment and will lead to obtaining the NEMC Certificate.

(d) identify any environmentally sensitive areas (e.g., wetlands, state lands (including submerged lands), coastal zones, wildlife parks, public parks, critical

habitats for endangered species, etc.) within an acceptable radius of the proposed solar farm location and any mitigation measures for these areas:

The project site is not within or near any sensitive ecosystem/area or within public utility area or defence strategic area, water bodies, protected areas, public utilities or schools. Reconnaissance survey revealed that the site is not located within, or nearby wetlands or other special environmental zones/sensitive areas such as state lands (including submerged lands), coastal zones, wildlife parks, public parks, or critical habitats for endangered species. Ruaha National Park is located approximately 150 km from the site (via Iringa-Msembe road), and Kilombero Nature Forest Reserve is about 90 km away via Iringa-Kilolo road. All the details are specified in the Environmental Impact Assessment Scoping report attached to this Technical Proposal

(e) identify any sites of historical or archaeological significance within an acceptable radius of the proposed solar farm location and any mitigation measures for these areas:

In terms of historical or archaeological sites of significance within the proposed solar farm location, site visits revealed the presence of graveyards in the Project's area. One of the identified graveyard sites is used for ritual activities mainly praying for rainfall during prolonged drought, but this grave is outside the final layout. Most of the identified graveyards will be avoided (no go areas) with an adequate buffer zone during site design and demarcation of the final footprint area (102 ha). Relocation of the grave(s) will be taken into consideration for the one(s) will be not possible to avoid. Apart from the graveyards and the ritual site, other heritage resources of historical or archaeological significance were not observed or reported in the project area. Consultations with the village authority and informal interviews did not reveal the presence of known sites within the area. However, further investigations

will be conducted in the upcoming baseline studies phase. In case of any discoveries, Solar Iringa Ltd will institute a Chance Find Procedures as per IFC PS 8 (cultural heritage) and national guidelines.

### Section 5.3 – Land Use

The area lies between an altitude from 1,660 to 1,620 meters above the sea level. The area is quite easy to access from a road connecting Iringa town to Kilolo district. A mix of small informal cultivation (maize and beans), low-density bush with the presence of trees is found in the project area and adjacent lands. There are no permanent houses or buildings in the area, only simple huts used by farmers during the work time in the fields. Several discussions and public meeting were held with local farmers, local landowners and relevant local authorities at village, ward and district level and the results were that the Solar project is fully compatible with the past and current land use, as the local landowners, are keen to give their land to the Project, according to the Tanzanian law requirements and after compensation. Moreover, Kilambo village enjoyed the USAID's Tanzania Land Tenure Assistance activity, that included land formalization and preparation of the village land use plans in selected villages along SAGCOT corridor for: hence is easier for the Solar Iringa Ltd to understand the ownerships of plots and boundaries of the village, avoiding the risk of potential future conflicts. Therefore, the village has a land use planning and all individuals with land parcels in the solar farm site have Certificates of Customary Rights of Occupancy (CCROs). The village leaders pointed out that the area has been earmarked for farming and grazing activities, no new buildings are allowed to be constructed in the selected area, hence the zoning is fully compatible with the PV Solar project construction.

### Section 5.4 – Solid Waste Disposal

A combination of building materials such as cement, gravels, water, sand, and woods will be used. Waste materials to be generated by construction and installation activities how they would be disposed of will include among others: Solid wastes that will be generated during construction work include spoils and remains of construction materials (e.g. sand, stone, gravel, rubbles and timber). The rubbles will be stockpiled in appropriate locations designated at the site and will be used later for reinstatement of the site at the end of the Project and the excess (if any) will be used for landscaping. Remains of timber will be reused or given to the villagers for their uses.

Concerning hazardous or non-biodegradable wastes such as used batteries, glasses, tins, cans, metals, and empty printer toners or cartridges, such wastes will be collected in separate bins and thereafter sorted and sent to the local dealers for recycling. For reusable glasses and metals, such remains will be collected and accumulated, and subsequently given or sold to scrap dealers. Packaging wastes will include cardboard boxes, plastic and glass bottles, wooden drums and empty cement bags. Also, during transmission line establishment work there will be remains of poles and conductors though in a small amount. The packaging materials will be collected and sorted according to their nature ready for recycling or for final disposal to the approved dumpsite in the District dumpsite. Plastic wastes will be collected and reused onsite or transported to recycling plants in Iringa District.

Electronic wastes that will be generated during the operation phase include used solar panels, used computers, control panels, used solar panels. These e-wastes will be transported to recycling companies in Dar es Salaam. Biodegradable wastes such as food remains will be dumped in dug controlled pits which will be established from time to time in a specified fenced area within the site area and covered with earth when filled up. Paper wastes will

be burnt in a specified location in the fenced area. Generally, about 0.35 kg/capita/day of solid wastes will be generated. Therefore, about 17.5 kg/day of solid wastes will be generated during mobilization and construction phase while about 3.5 kg/day of solid wastes will be generated during the operation phase, mostly solid wastes will be collected by a contracted company and disposed of at the District dumpsite. Most of the plastic wastes will be sent to recyclers.

#### Section 5.5 – Water Sources and Uses

Solar Iringa Ltd assumes that a certain quantity of raw water is needed for the Project, in particular, to execute the full cleanings of the PV modules twice a year. Giving the fact that the proposed 49.81 MWp Solar plant will be composed by 121,500 modules, and assuming that 1.5 litres of water are needed for the biannual cleanings, the Project will need 365 m<sup>3</sup> of water per year for the cleaning of the panels. On top of this amount, it should be considered another 50 m<sup>3</sup> of water for general use, toilet, etc.

Regarding source water, the site looks to be potential in terms of water and the Solar Iringa Ltd is going to drill one or more borehole to extract water. The Rufiji Basin Authority wrote us a letter of non-objection on the Project and they gave us the direction on how to do survey and drill. The water shall be as clean as possible. A part of the water shall be treated in order to be safe for the workers during the construction phase.

Another possibility to get the required water for the cleaning of photovoltaic modules, fire extinguishing system and water consumption by the staff, could be provided from storage tanks, which will be periodically refilled by tank trucks.

## **Chapter 6: Engineering and Design Plans**

### Section 6.1 – Operations and Maintenance Plan

Compared to other power generating technologies, solar PV power plants have low maintenance and servicing requirements. However, proper maintenance of a PV plant is essential to maximize both energy yield and the plant's useful life. Optimal operations must strike a balance between maximizing production and minimizing cost.

Maintenance can be broken down as follows:

- **Scheduled maintenance:** Planned in advance and aimed at fault prevention, as well as ensuring that the plant is operated at its optimum level.
- **Unscheduled maintenance:** Carried out in response to failures.

Suitably thorough and regularly scheduled maintenance should minimize the requirement for unscheduled maintenance although, inevitably, some unforeseen failures will still occur. A robust and well-planned approach to both scheduled and unscheduled maintenance is therefore important.

The presence of an operation and maintenance (O&M) Contractor is crucial to define the parameters for the operation and maintenance of a project during its life. When an O&M Contractor is being employed to undertake these tasks, it is important that all requirements relating to preventative and corrective maintenance, performance monitoring and reporting are clearly stated in the contract along with the frequency with which these activities need to be conducted. This allows contractor performance to be measured and if necessary challenged. It is normal for an O&M contractor to guarantee plant performance during the contract term hence is the entity responsible for operating and maintaining the Project. In the event of the contractor not honouring its obligations, resulting in the plant performing below the

guaranteed value, the owner would be eligible to claim for compensation to cover lost revenues. This section provides explanation and lists as an overview of the requirements of the Minimum Functional Specifications for the O&M contractor. During the Operating period, assumed in 20+5 years as per PPA duration, the O&M Contractor will need the equivalent of 3,120 man-months (13 man-months times 20 years) all of them skilled local workers. The dedicated team will be composed by 1 Plant Manager, 2 Control Room Operator, 1 Administrative Assistant, 2 Electrical Technician, 2 Mechanical Technician, 3 Module Cleaning Personnel and 2 Security & Surveillance.

The intent of this section is to illustrate that the Contractor is responsible for all activities to maintain and operate the Project. Contractor shall prepare, implement and continuously update a project-specific ESHS plan that includes, but is not limited to:

- Project ESHS Organization,
- Handling non-conformances,
- ESHS Meetings,
- Work Permit,
- Safe Job Analysis,
- ESHS Monitoring and Reporting,
- Emergency Response Plan and Procedures,
- Worker accommodation, transport, catering and sanitary facilities,
- Road Safety,
- Waste Handling,
- Telecommunications.

Major components, with a frequency of execution per year, of the O&M contract, include:


Service area/ Item description	O&M included Service
<b>System Performance Monitoring and Alarm Servicing</b>	
Provide real-time monitoring of Project performance and all monitored equipment including inverters, combiners, re-combiners, weather stations, power/energy meters, trackers as applicable.	x
Provide Owner access to a web-based interface to monitor system performance. The web-based interface shall provide performance characteristics, actual vs expected performance and details of any alarm conditions including Contractor diagnosis.	x
Contractor shall provide data archiving services to maintain all Plant data for the Term of the Agreement.	x
Respond to alarm and alert conditions and dispatch service personnel according to the response times indicated in the Heads of Terms.	x
<b>Warranty Administration (Warranties include both component and EPC warranties)</b>	
Perform warranty-eligible repairs of all equipment or supervision thereof when performed by the warranty provider. Warranty eligible repairs include labour required to remove/replace defective components and shipping	x

Pursue all warranty-eligible claims with equipment suppliers including requesting of return material authorization numbers, processing warranty claim paperwork and responding to supplier inquiries to support warranty claim processing.	x
<b>Unscheduled Maintenance—All Project Equipment</b>	
Contractor shall implement Failure analysis, assess and make recommendations regarding required unscheduled maintenance and failures.	x
<b>Inventory, Spare Parts Inventory and Safety Equipment Management</b>	
Maintain an inventory list of all project equipment and serial numbers of all serialize equipment.	continuous
The contractor should maintain a stock of consumable and emergency spare parts on his charge and according to the manufacture recommendation	continuous
Inspect and test all safety equipment as required by the manufacturer. Recharge fire extinguishers.	continuous/as needed
Perform any required equipment calibration services required for stored spare parts based on the manufacturer's recommendations. Equipment stall is stored in a climate-controlled environment if required by the equipment manufacturer.	x
<b>Maintenance and Performance Reporting</b>	
Provide a detailed maintenance report within 5 Business days of each service visit to the site.	x

<p>Performance reporting in accordance with this agreement which shall include monthly, quarterly and annual reports summarizing plant performance (vs expected performance), maintenance activities, spare parts inventory, upcoming planned maintenance, forced outages, visitor logs and availability. Reports shall also include analysis from performance optimization analysis with recommendations for potential fieldwork that may result in improved availability or performance.</p>	<p>x</p>
<p>Within 30 days following the anniversary date of the Agreement, Contractor shall provide a project service plan.</p>	<p>x</p>

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Solar Iringa Ltd proposes the below annual maintenance plan. It would be changed according to the needs of the Project.

			ANNUAL MAINTENANCE PLAN												IRINGA	
ACTIVITY	FREQUENCY	TYPE *	JAN	FEB	MAR	APR	MAY	JUN	JUL	AGO	SEP	OCT	NOV	DEC		
<b>1 SOLAR STRUCTURES</b>																
1.1 Elements	Annual	PV			X X X X											
1.2 Tracker system	Semestral	PV			X X X X						X X X X					
1.3 Screws	Semestral	PV			X X X X						X X X X					
1.4 Motors	Annual	PV			X X X X											
<b>2 PV MODULES</b>																
2.1 Visual inspection	Bimensual	RO		X X		X X		X X		X X		X X		X X		
2.2 Thermography and IV curve	Annual	PD		X X X X	X X X X	X X X X				X X X X	X X X X					
2.3 Cleaning	Semestral	PV		X X X X	X X X X					X X X X	X X X X					
<b>3 BOXES (COMBINER BOXES, CONTROL TRACKER, ANCILLARY SERVICES)</b>																
3 Visual inspection	Semestral	RO	x						x							
3.2 Thermography and IV curve	Annual	PD					x x									
3.3 Cleaning	Semestral	PV			x						x					
3.4 Check correct operation of switches	Semestral	PV	x						x							
<b>4 OUTDOOR CABLING</b>																
4.1 Visual inspection AC/DC wire runs-grounding	Semestral	RO		x						x						
4.2 Wire connections	Annual	PV				x x										
4.3 State of cable terminals	Annual	PV				x x										
4.4 Insulation resistance testing of all conductors	Annual	PD					x x									
4.5 Perform open circuit voltage and either operating current or short circuit current	Annual	PD					x x									
<b>5 INVERTERS</b>																
5.1 Visual Inspection	Semestral	RO														
5.2 Preventive Maintenance by Manufacturer	Semestral	PV														
5.3 Check inverter operator display	Semestral	PV														
<b>6 MV EQUIPMENT</b>																
6.1 Visual inspection transformer	Annual	RO			x x								x x			
6.2 Thermography	Annual	PD			x x								x x			
6.3 Inspection control of protection	Annual	PV			x x								x x			
6.4 Perform dissolved gas analysis step-up transformer	Annual	PV			x x								x x			
6.5 Perform functional testing	Annual	PV											x x			
7 MONITORING	Semestral	PV		x						x						
<b>8 WEATHER STATION</b>																
8.1 Inspection including all sensors	Quarterly	PV		x			x			x			x			
8.2 Cleaning of calibration cells and pyranometer	Weekly	PV	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x	x x x x		
8.3 Calibration of calibration cells and pyranometer	Annual	OP							x							
8.4 Check proper operation	Semestral	PV		x					x							
<b>9 SECURITY SYSTEM</b>																
<b>10 BUILDINGS</b>																
10.1 Common facilities and warehouse	Annual	PV											x			
10.2 Switchgear block	Annual	PV											x			
10.1 MV Transformer building	Annual	PV											x			
10.4 Inspection of fire extinguishers	Annual	PR											x			
<b>11 CIVIL WORKS</b>																
11.1 Roads and access	Annual	PV		x x												
11.2 Grass vegetation	Semestral	PV		x x												
11.3 Drainage	Annual	PV		x x						x x						
11.4 Fence	Continuous	PV		x x												
11.5 Manholes	Annual	PV			x x											

**NOTES**  
\* Type of maintenance: Preventive (PV), Predictive (PD), Routine Operation (RO)

Figure 8: Schedule 4 - Engineering and Design (Source: Solar Iringa Ltd)

As mentioned above, the presence of an operation and maintenance (O&M) Contractor is crucial for the O&M of the Project. The Proponent has signed Letters of Intent (LoI) with some of the most experienced and reliable EPC Contractors at the global level. These Contractors are also in the best position to provide O&M services to the Project, providing deep industry knowledge of the same. With the signature of the LoI, the O&M Contractor demonstrate its commitment to the Project and the two parties intend to enter into negotiations for the purpose to conclude a contract for engineering, procurement of equipment, construction, commissioning as well as operation & maintenance of the Project. The list of these Contractors and their references for the Solar PV projects of at least 20 MW is described later below.

#### Section 6.2 – Engineering Plan

The Proponent provides engineering plan which identifies the following:

- (a) Solar technology, including a detailed description of the requirement and technical specification, market analysis, make, model, code/standards, etc.;
- (b) Metrological station including a detailed description of the requirement and technical specification;
- (c) major equipment to be employed, including a detailed description of the requirement and technical specification;
- (d) required manufacturers' warranties for equipment and components; and
- (e) vendors/suppliers of major equipment.

#### Section 6.3 – Operating Performance References

In order to demonstrate that the technology selected for the construction of the proposed PV Solar plant, Solar Iringa Ltd is providing in the follow table historic operating performance data for projects of similar technology

which demonstrate that the proposed technology will be able to achieve the operating targets specified.

<b>Component</b>	<b>Make</b>	<b>Model</b>	<b>Project Location</b>	<b>Project size (MWp)</b>	<b>N. of Modules Installed</b>
PV Panel	JA Solar	JAM72S01-PR	Mexico, Santiago	232	640,000
PV Panel	JA Solar	JAM72S01-PR	Mexico, Hermosillo	137.9	380,413
PV Panel	JA Solar	JAM72S01-PR	India, Karnataka	145	369,261
PV Panel	JA Solar	JAM72S09-PR	China, Qinghai	25	65,789
PV Panel	JA Solar	JAM72S10-PR	China, Ningxia	10	25,316
<b>Component</b>	<b>Make</b>	<b>Model</b>	<b>Region/Country</b>	<b>Quantity</b>	<b>Shipment Month</b>
Inverter	Huawei	SUN2000-175KTL-H0	China	30	201905
Inverter	Huawei	SUN2000-175KTL-H0	China	196	201906
Inverter	Huawei	SUN2000-175KTL-H0	China	200	201906
Inverter	Huawei	SUN2000-175KTL-H0	China	29	201907
Inverter	Huawei	SUN2000-185KTL-H1	Malaysia	62	201906
Inverter	Huawei	SUN2000-185KTL-H1	Malaysia	65	201906
Inverter	Huawei	SUN2000-175KTL-H0	China	390	201906

Inverter	Huawei	SUN2000-185KTL-INHO	India	547	201907
Inverter	Huawei	SUN2000-185KTL-INHO	India	23	201907
Inverter	Huawei	SUN2000-185KTL-INHO	India	125	201908
Inverter	Huawei	SUN2000-185KTL-H1	Malaysia	73	201906
Inverter	Huawei	SUN2000-185KTL-INHO	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	1579	201908
Inverter	Huawei	SUN2000-175KTL-H0	China	30	201908
Inverter	Huawei	SUN2000-175KTL-H0	China	100	201908
Inverter	Huawei	SUN2000-185KTL-INHO	India	70	201907
Inverter	Huawei	SUN2000-175KTL-H0	China	224	201906
Inverter	Huawei	SUN2000-185KTL-H1	Malaysia	44	201906
Inverter	Huawei	SUN2000-185KTL-H1	Malaysia	90	201906

Inverter	Huawei	SUN2000-185KTL-H1	Chile	75	201908
Inverter	Huawei	SUN2000-185KTL-H1	Netherlands	80	201908
Inverter	Huawei	SUN2000-185KTL-H1	France	12	201909
Inverter	Huawei	SUN2000-185KTL-H1	Turkey	50	201909
Inverter	Huawei	SUN2000-185KTL-H1	Turkey	15	201909
Inverter	Huawei	SUN2000-185KTL-H1	Turkey	19	201909
Inverter	Huawei	SUN2000-185KTL-H1	Ukraine	312	201909
Inverter	Huawei	SUN2000-185KTL-H1	Ukraine	102	201909
Inverter	Huawei	SUN2000-185KTL-H1	Spain	44	201909
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	30	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	100	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	88	201909
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	30	201909
Inverter	Huawei	SUN2000-185KTL-H1	Chile	36	201907
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	29	201908
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	29	201908

Inverter	Huawei	SUN2000-185KTL-H1	Brazil	16	201908
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	20	201908
Inverter	Huawei	SUN2000-185KTL-H1	Brazil	29	201908
Inverter	Huawei	SUN2000-185KTL-INH0	India	162	201908
Inverter	Huawei	SUN2000-185KTL-H1	Spain	60	201908
Inverter	Huawei	SUN2000-185KTL-H1	Ukraine	30	201908
Inverter	Huawei	SUN2000-185KTL-H1	Spain	30	201908
Inverter	Huawei	SUN2000-175KTL-H0	China	111	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	811	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	284	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	926	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	231	201909
Inverter	Huawei	SUN2000-175KTL-H0	China	212	201909
Inverter	Huawei	SUN2000-185KTL-INH0	India	127	201908
Inverter	Huawei	SUN2000-185KTL-INH0	India	127	201908

<b>Component</b>	<b>Make</b>	<b>Model</b>	<b>Region</b>	<b>Project Location</b>	<b>Project size (MWp)</b>
Tracker	Soltec	FS Utility	USA	South Carolina	28
Tracker	Soltec	SF7 - SolarFrontier	USA	California	26
Tracker	Soltec	SF7 - FirstSolar S6	USA	Hawaii	19.3
Tracker	Soltec	FS Utility	USA	Minnesota	150
Tracker	Soltec	FS Utility	USA	Arizona	38
Tracker	Soltec	FS Utility	USA	Oregon	13
Tracker	Soltec	FS Utility	Mexico	Guanajuato	238
Tracker	Soltec	SF7 Bi-facial	Mexico	Magdalena	232
Tracker	Soltec	SF7	Mexico	Akin	131
Tracker	Soltec	SF7	Mexico	Pachamama	375
Tracker	Soltec	SF7	Mexico	Aguascalientes	68
Tracker	Soltec	SF7 Bi-facial	Mexico	Potrero	297
Tracker	Soltec	SF7	Mexico	Guanajuato II	22.3
Tracker	Soltec	FS Utility	Brazil	Piauí	292
Tracker	Soltec	SF Utility	Brazil	Bom Jesus da Lapa	158
Tracker	Soltec	SF Utility	Brazil	Rio Grande do Norte	101.5
Tracker	Soltec	SF7	Brazil	Minas Gerais	80.5
Tracker	Soltec	SF7	Brazil	Bahia	37.5
Tracker	Soltec	SF7	Brazil	Minas Gerais	5.1
Tracker	Soltec	SF7	Brazil	Minas Gerais	5.5
Tracker	Soltec	SF7 Bi-facial	Brazil	Minas Gerais	235

Tracker	Soltec	SF7	Brazil	Sao Joao de Piauí	223
Tracker	Soltec	SF7 Bi-facial	Brazil	Piauí	204.3
Tracker	Soltec	SF7	Brazil	Ceará	162.3
Tracker	Soltec	SF Utility	Brazil	Minas Gerais	158.3
Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Moquegua	180
Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Antofagasta	160
Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Antofagasta	80
Tracker	Soltec	SF7 Bi-facial	Colombia, Peru, Chile & Argentina	Coquimbo	1.7
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	Atacama	120
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	LL II	173
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	F II	125
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	Copiapó	46
Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Calama	22

Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Atacama	12
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	Atacama	208
Tracker	Soltec	SF7	Colombia, Peru, Chile & Argentina	Cesar	86.2
Tracker	Soltec	SF Utility	Colombia, Peru, Chile & Argentina	Antofagasta	79
Tracker	Soltec	SF7 Bi-facial	Spain, France, Italy, Denmark, Turkey	Roskilde	0.42
Tracker	Soltec	SF Utility, SA-Series, 10K5	Spain, France, Italy, Denmark, Turkey	Italy	36
Tracker	Soltec	SF7	Spain, France, Italy, Denmark, Turkey	Murcia	84.9
Tracker	Soltec	SF7	Spain, France, Italy, Denmark, Turkey	Aragón	200
Tracker	Soltec	SF7	Spain, France, Italy, Denmark, Turkey	Extremadura	300
Tracker	Soltec	SF7	Spain, France, Italy, Denmark, Turkey	Castilla La Mancha	146
Tracker	Soltec	SF Utility	Egypt, Jordan, Israel, Namibia & Kenia	Al-Zumeilah	17

Tracker	Soltec	SF7	Egypt, Jordan, Israel, Namibia & Kenia	Merhavim&Bne i Shimon	17
Tracker	Soltec	SF7	Egypt, Jordan, Israel, Namibia & Kenia	Aswan	382
Tracker	Soltec	SF7	Egypt, Jordan, Israel, Namibia & Kenia	Hardap	48
Tracker	Soltec	SF7	Egypt, Jordan, Israel, Namibia & Kenia	Kericho	0.62
Tracker	Soltec	SF7	Australia & Pacific	Queensland	70
Tracker	Soltec	SF7 Bi-facial	Australia & Pacific	Victoria	35
Tracker	Soltec	SF7	Australia & Pacific	Kampangphet	15

Section 6.4 – Solar Farm Layout

Solar Iringa Ltd provides below a plan drawing showing the layout of the proposed Solar Farm.

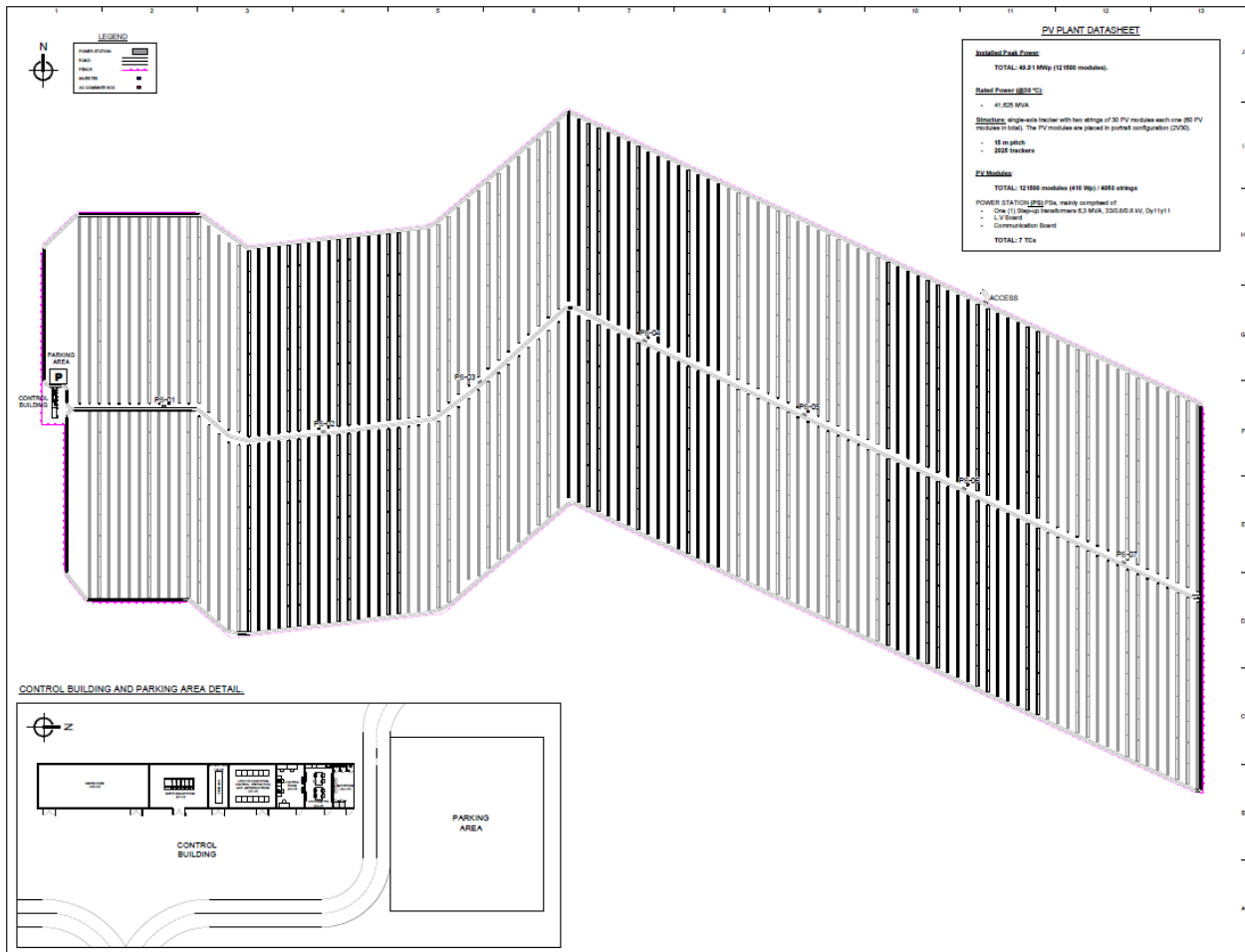


Figure 9: A05\_AE0158-IRI-DW-02-GENERAL LAYOUT

Section 6.5 – Unit and Solar Farm Performance

Solar Iringa Ltd provides the following projected unit performance information, including values for all parameters:

- (i) Forced Outage Rate: 0.5% (basically related to inverter station failure as there is no 33/220-kV step-up transformer).
- (ii) Expected availability: 99.5% (Planned outage to be scheduled in non-operating hours).

Regarding grid availability, the data are resulting in 1.5% grid unavailability.

**Chapter 7: Site Control**

Section 7.1 – Site Location

Solar Iringa Ltd provides a map at 1:25,000 scale that indicates the location of the project site, identifies the location of all generation equipment, substation, other equipment, and all new rights of way that would be required for the Project. The map shows the proximity to and identifies the nearest substations approved by TANESCO for interconnection purposes (Interconnection Point). Critical dimensions are also indicated.

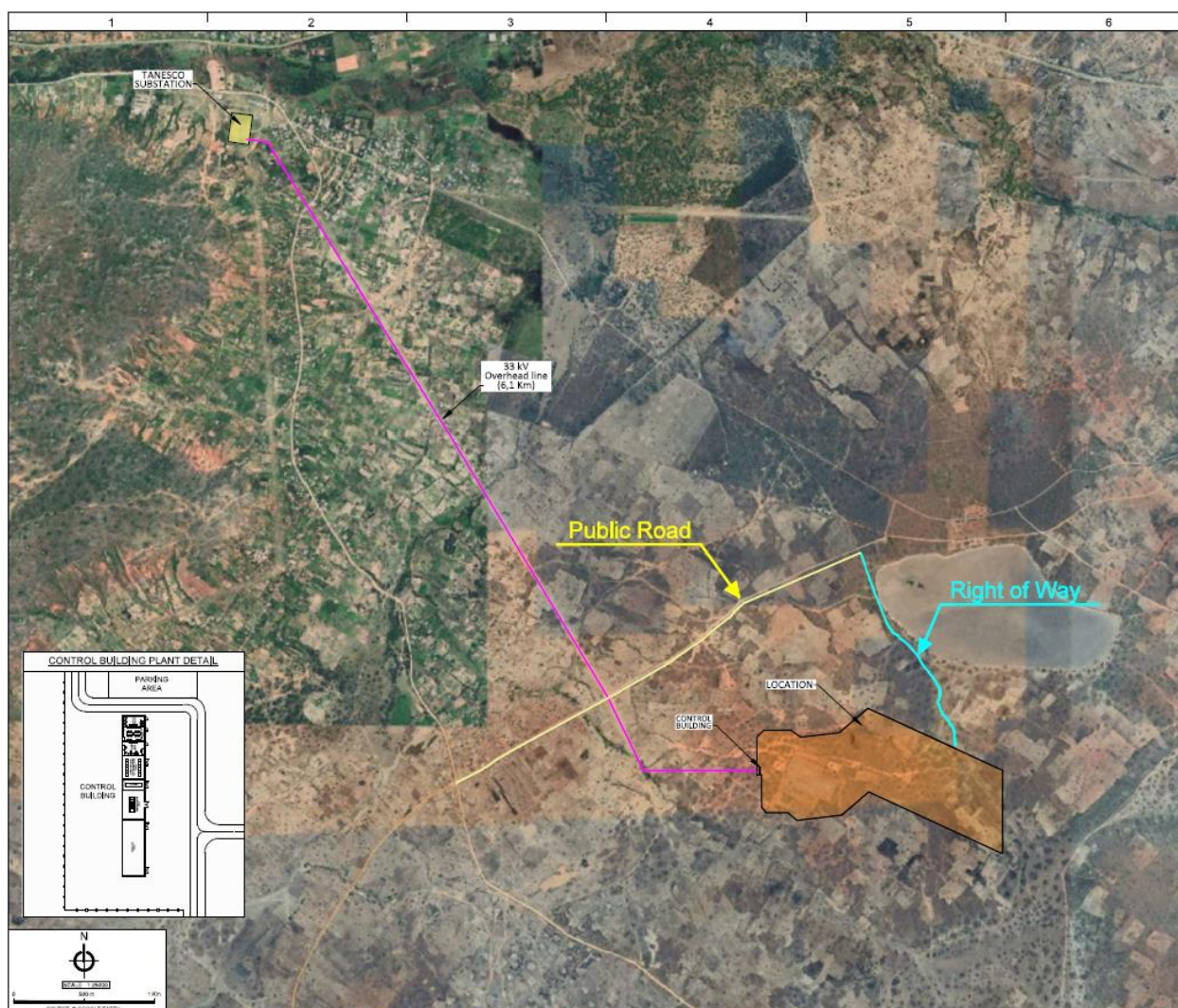


Figure 10: A03\_AE0158-IRI-DW-01-LOCATION 2 (Source: AFA)

Section 7.2 – Land Ownership/Right of Use of the Project Site

Initially Solar Iringa Ltd started the development of the Solar Project in the boundaries of the Tagamenda and Kilambo villages, in Iringa District. According to the village's boundaries' map from the Iringa District Land Office, the pre-selected area for the Solar project lies for its large majority within the boundaries of Kilambo village, and only a small portion within the boundaries of Tagamenda village. For this reason, we decided to slightly amend the layout of the pre-selected area, to include the whole area within the boundaries of Kilambo village, in order to deal with only one village to speed up the process of the development of the Project. The proposed 320 ha of land earmarked for the solar PV power plant area is currently owned by different village members (73 smallholder farmers) who are direct Project Affected Persons (PAPs). However, the final footprint of the plant is expected to require about 110 ha only (37%) of the land, which means the number of PAPs will reduce significantly and the magnitude of economic displacement minimized to the extent possible at the early stages of site selection and preliminary design. Solar Iringa Ltd intends to return the remaining portion of the land (63%) to the owners.

After high-level screening and assessment of the potential land for the installation of the solar PV plant, in September 2018 RP Global Holding Italy Srl initiated a series of stakeholders engagements with the district and village authority and community in Kilambo village in order to introduce the Project, awareness creation and gaining access to the 320 ha land for feasibility study. The village council convened an extraordinary meeting of the village assembly to discuss and decide upon the matter of extraordinary public importance. The access to land request was deliberated by the village assembly. In the village meetings, Solar Iringa Ltd was accompanied by the District Council's Legal Officer and Land Officer. The result of the village and community meetings was identification of individual landowners and farm sizes in the solar farm area (73 persons), awareness creation, negotiations and eventually signing of the Access and Option Agreement with the

Kilambo village council and individual landowners on May 10, 2019 to allow for the feasibility study in the area. Solar Iringa Ltd has been granted a 5 years access period with a possibility to extend to 7 years exclusive access to the area for feasibility studies. The exclusive access entails that the village council and landholders shall not grant any right in or to the land to any other person who is similar to or potentially in conflict with the rights granted to Solar Iringa Ltd, and any activities that may conflict with the proposed solar PV development project. The district's Legal and Land Departments were also involved in the process and in the contract signing. In respect to the continued right of access and land use for the villagers, the landholders shall continue carrying out other activities on their land mainly daily farming and grazing activities. Activities such as buildings, structures, telecommunication towers that might potentially obstruct or interfere with the Project cannot be established without the prior written consent of Solar Iringa Ltd. In respect to accessing the land for conducting various investigations including samples collection, it was collectively agreed that Solar Iringa Ltd will pay an access fee of TZS 6 Ml whereby each individual owner will get TZS 62,500/= as access fee. This was paid for all identified landowners, and it is understood by all parties that this is no compensation for the properties. If the Option Access Agreement will be extended for 2 years (7 years), Solar Iringa Ltd shall pay the village council TZS 3 Ml. After completion of feasibility studies and demarcation of the 102 ha for footprint, Solar Iringa Ltd will acquire the land through Tanzania Investment Centre (TIC) in compliance with the national guidelines, statutory requirements and IFC Performance Standards, in particular, PS 5 (Involuntary Resettlement). Solar Iringa Ltd, since the major shareholder is a foreign company, will apply for land through Tanzania Investment Centre (TIC), stating the location of the Land and the nature of the Project to be undertaken. Moreover, Solar Iringa Ltd will liaise with the respective local authority in which the land is located with regards to the exercise of the

option, which eventually will lead to preparation of village land use plan, survey of the land, valuation of landed properties, payment of compensation or purchase price to third parties and conducting Environmental Impact Assessment (EIA). The District Council will approve the village deliberations and forwards to the Ministry of Lands, which will submit the whole casework to the President for final approval. After the President's approval, the village Landform No. 8 is prepared and gazette stating that after 90 days, the said land will be transferred from village land to general land. Thereafter if no objection is raised, such land will be transferred to general land. The Assistant Commissioner of Lands will prepare and issue Landform No. 1 (Designation of Land for Investment Purposes) for gazette and copies are served upon the Chief Executive Officer of the TIC and authorized land officers for signatures. The National Land Allocation Committee will convene to discuss and approve the allocation of land to Solar Iringa Ltd. After the approval of the National Land Allocation Committee, Solar Iringa Ltd, where applicable, requests for the amendment of its certificate of incentives in order to include the titles of the Land. TIC will then request the Commissioner of Lands to issue an invoice for Solar Iringa Ltd for the fee (stamp duty, rent and premium) so as to prepare the granted right of occupancy (GRO) in the name of TIC. Additionally, Solar Iringa Ltd will be required to pay to TIC 10% of the total cost as facilitation fees. The Ministry of Lands will prepare and issue to TIC acknowledge of payments form for TIC Chief Executive Officer's signature. After signature the form is will be returned back to the Assistant Commissioner for Lands. The Assistant Commissioner for Lands will prepare a draft of a certificate of right of occupancy in the name of TIC and submits to TIC for signature. The Assistant Commissioner for Lands will sign in the certificate of occupancy and thereafter submit to the Registrar/Assistant Registrar of Titles for registration. Upon registration of the certificate of occupancy, the title will be issued to TIC.

TIC will prepare derivative right and application for leasehold title, and both parties, TIC and the Solar Iringa Ltd, execute the document. TIC will submit the derivative right and application for leasehold title, to the Registrar/Assistant Registrar of Titles for registration. TIC collects the fully registered derivative right and leasehold title from the Registrar/Assistant Registrar of Titles and one copy is issued to Solar Iringa Ltd.

### Section 7.3 – Right of Way

After electricity generation at the power plant, it will be exported to the existing grid network at TANESCO's existing Tagamenda sub-station located nearby Ipogolo junction in Iringa municipality. The 6 km long grid connection transmission cable (likely an overhead cable) will be constructed from the site to the sub-station. The transmission cable (33-kV line) to the existing TANESCO's Tagamenda substation will use the existing wayleave from the site along the existing access road that links the Mseke B sub-village with the Iringa-Kilolo road. The use of the existing wayleave will minimize and/or avoid further land acquisition, resettlement issues and associated disruption of livelihoods, utilities and other infrastructure along the way. The substation will also have the required grid interface switchgear such as circuit breakers (CBs) and disconnects for protection and isolation of the PV power plant, as well as metering equipment.

As the transmission system operator of Tanzania, the design and construction of the Iringa solar PV power plant transmission line will be carried out in collaboration with TANESCO. The overall design standards will be consistent with the existing transmission infrastructure operated by TANESCO and will comply with international best practice in electrical transmission infrastructure.

## **Chapter 8: Interconnection Plan**

Solar Iringa Ltd provides a detailed interconnection plan that shows the cost to interconnect. It also indicates the proposed interconnection configuration and the cost for any network upgrades and any project-specific works to satisfy the requirements of the interconnection of the Plant according to the Grid Code.

### Section 7.0 – Transmission/Network Plan

Solar Iringa Ltd provides a transmission network plan that identifies their Project's proposed transmission path, including the Interconnection Point.

The PV plant will be located south-east of Iringa Town and will connect with a 6.1 km, 33-kV overhead line to TANESCO's 220-kV substation. The power will be evacuated with double circuit ACSR "Hawk" line, which will be constructed in the TANESCO 220-kV wayleave.

The solar plant will consist out of 225 string inverters divided into seven blocks with each block feeding into a 6.3 MVA 0.8/33-kV step-up transformer. The 33-kV line will terminate on the 33-kV bay where it is assumed that the metering equipment will be situated. The connection point for the Iringa PV Plant has been projected in the TANESCO substation (SET), located at the North-west of Iringa PV Plant, as the following figure shows. This substation is equipped with 2 spare feeders where the Iringa PV plant could evacuate the generated energy.

The interconnection of the PV plant with the TANESCO facilities will be through a 33-kV overhead line (OHL) that is about 6.11 km long. The OHL layout will be parallel to an existing 220-kV and 33-kV lines, as it can be seen in the figure below.



Figure 11: Existing 220-kV and 33-kV lines (Source AFA)

The proposed layout is shown in the figure below, and it will follow the existing 220-kV TANESCO OHL corridor.

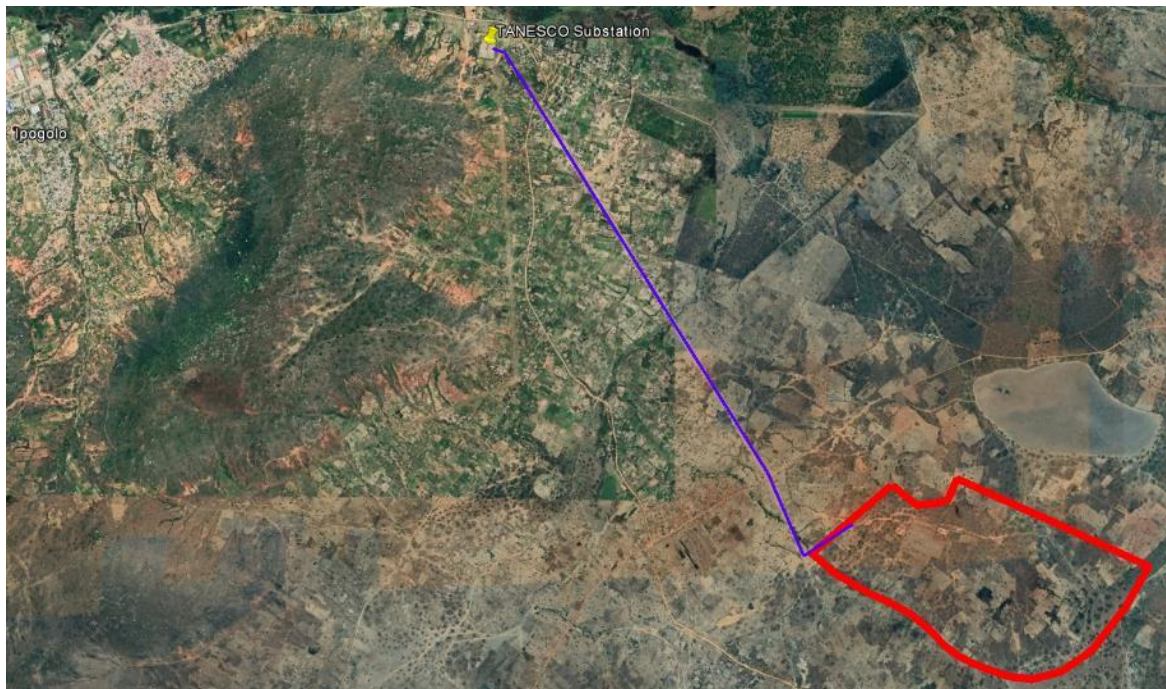


Figure 12: Overhead Line Layout (Source: AFA)

The main characteristics of this interconnection line are indicated in the table below.

Description	Value	Units
<b>Rated power</b>	41.62	MVA
<b>Nominal voltage</b>	33	kV
<b>Type of line</b>	Over-Head Line	
<b>Length</b>	6.11	km
<b>N° circuits</b>	1	
<b>Conductors per phase</b>	2 (Duplex)	
<b>Conductor section</b>	281	mm <sup>2</sup>
<b>Conductor material</b>	Al/Steel	
<b>Conductor configuration</b>	24/7	No.
<b>Conductor designation</b>	Hawk	
<b>Earth wires</b>	OPGW 15 48 FO monomode	.
<b>Poles</b>	Wooden poles	
<b>Isolators</b>	Porcelain	

A drawing showing the type of transmission line (or similar) to be erected is provided in the next figure:

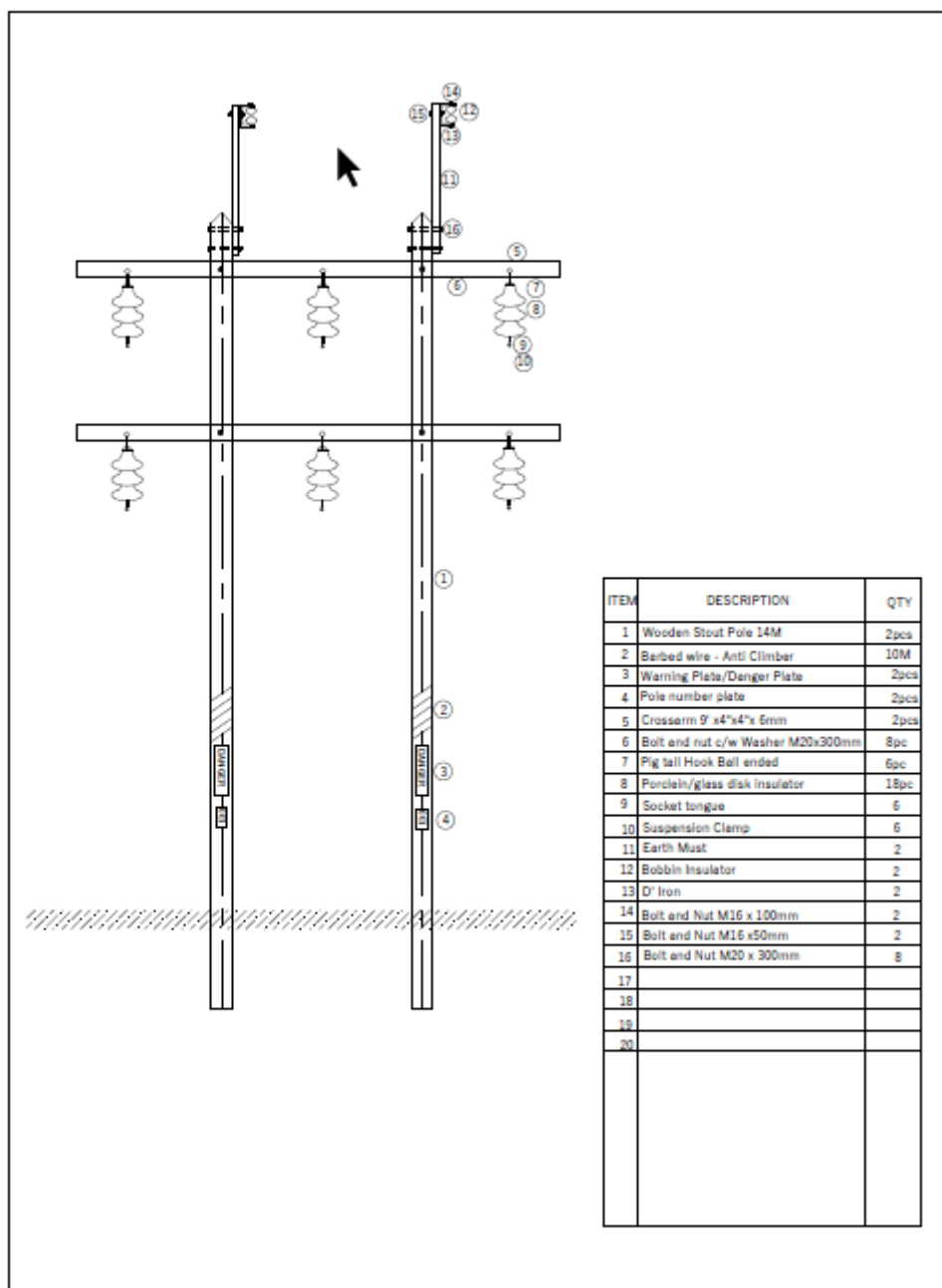


Figure 13: Transmission Line Design (Source: Solar Iringa Ltd/AFA)

The TANESCO Substation is accessible from the A-7 road, and it is located within a rural area with gravel roads. They are transited by trucks, which make them suitable for transporting different equipment to be installed. The following figure remarks the access road to the SET in blue:



Figure 14: TANESCO Substation Access Road (Source: AFA and Google Earth)

The following figure shows a general layout of the TANESCO Substation.



Figure 15: Status of the TANESCO Substation for the locations identified from the general layout (Source: AFA and Google Earth)



Substation 33-kV Bays



Substation 220-kV Bays



33-kV Spare Feeder



Circuit Breaker Plate of Spare Feeder

Figure 16: Substation Detail Views (Source: AFA)

The substation is composed by 220-kV and 33-kV bays as shown in the figures above. The line bays are connected to different overhead lines (220-kV and 33-kV) to interconnect to the Tanzanian Electrical Grid. The Substation is operated by TANESCO staff (Grid Operator). The substation is equipped with:

- two (2) MV/HV transformers, to step the voltage from 33-kV to 220-kV, the rated power is 15/22.5 MVA ONAN/ONAF per transformer;

- three (3) shunt reactors (two 33-kV reactors and one 220-kV reactor).

The interconnection of the PV project will be in the 33-kV side, in one of the spare feeders. The rating of the Circuit breaker of the feeder is:

- Rated Current: 2,000 A,
- Rated Voltage: 36-kV,
- Rated short circuit current: 31.5 kA (3 sec).

The 33-kV bus bar of TANESCO's 220/33-kV Substation has two 22.5 MVA transformers feeding into the buss bar which can be isolated by a bus section switch. Currently, there are two vacant 33-kV bays, one on each side of the 33-kV bus bar. TANESCO has in its bidding documentation allow developers to utilize only one bay. During the site visit to the TANESCO 220-kV substation, the following were noted regarding the 33-kV bay. Some adjustments in the Iringa Substation are necessary:

- The main bus bar is designed to carry the maximum current (400 A) of the 22.5 MVA transformers. Since no as-built information of equipment was available, an on-site inspection with TANESCO has revealed that the current-carrying capacity of the bus bar conductor is around 450 A. This is inadequate and should 740 A be injected into the 33-kV bus bar and it should be replaced with a bus bar capable of carrying 1,000 A. Termination clamps should also be replaced with the correct ones;
- It was noted that the bay jumpers would not be able to carry 740 A and that the current ratios of the existing CT are too small and needs to be replaced with a CT with ratios of at least 1,250/1. Secondly, the jumper conductors between the various 33-kV bay equipment need to be replaced with jumper conductors that can carry 740 A.

The control and protection scheme need to be wired and programmed into the existing SCADA, HMI system in case it wasn't.

Since the design of the evacuation line is with one circuit duplex, it is possible to connect to the existing bay with the necessary upgrade, as long as TANESCO agrees.

The Bill of Quantities including the list of major equipment and the costs for the upgrades of the existing bay in TANESCO Substation are detailed in the following table:

BOQ - IRINGA SUBSTATION INTERCONNECTION					
ITEM	UNITS	DESCRIPTION	QUANTITY	UNIT PRICE (\$)	TOTAL PRICE (\$)
<b>1</b>		<b>CONNECTING TO 33KV BUS BAR USING EXISTING BAY</b>			
<b>1.1</b>		<b>Reconfiguring Existing Bay</b>			
1.1.1	each	Replace existing bay CT with 1250/5/5 (inclusive supply of CT)	3	7,000.00	21,000.00
1.1.2	each	Modify CT support structure to accommodate new CT	3	800.00	2,400.00
1.1.3	m	Replace existing AAC jumper cable of 33kV bay with higher rated AAC, including AL	39	75.00	2,925.00
1.1.4	m	Replace existing AAC 33kV BB to 800A rated AAC, including AL clamps	120	45.00	5,400.00
<b>1.2</b>		<b>Metering Unit</b>			
1.2.1	each	CT /VT 1250/1/1 and VT Inclusive of support structure	3	7,500.00	22,500.00
1.2.2	each	Disconnecting Switch 1250A - Inclusive of Support structure	3	4,000.00	12,000.00
1.2.3	each	Lightning Arrestors	3	1,100.00	3,300.00
1.2.4	each	Steel Support Structures for CT/VT, Disconnectors and Lightning Arresters	3	800.00	2,400.00
1.2.5	each	Gantry Structure to Terminate overhead Line A type 6meter high and 6m wide	1	7,000.00	7,000.00
1.2.6	m <sup>3</sup>	Concrete Foundation for structures	4	350.00	1,400.00
1.2.7	m	Control Cabling 2.5mm <sup>2</sup> x 5c	500	6.00	3,000.00
1.2.8	each	Integration into Existing SCADA, HMS	1	3,000.00	3,000.00
1.2.10	each	Device clamp SY 240/30 for Jampers	18	75.00	1,350.00
Total					87,675.00

Figure 17: BOQ Interconnection point (Source: Solar Iringa Ltd)

The makes of the major equipment will be the following:

- For CT/VT: Artech, Siemens, ABB or similar.
- For circuit breakers and disconnectors: GE, ABB, Siemens or similar
- Lightning arrestor: ABB, Siemens, EATON or similar

- Gantry Structures and steel support structure: local supplier

The major equipment will be procured from leading Tanzanian suppliers/importers. The cables will be acquired from Africab Group, East African Cables Ltd, Multicable Ltd or Everwell Cable Ltd. For CT/VT transformers, disconnectors, etc. the main suppliers will be TANELEC Ltd, Africab and Everwell Cable Ltd.

#### Section 7.1 – Network Resource and System Impact

Solar Iringa Ltd has conducted an interconnection study. The report was carried out by EEI Electrical Power Systems, a reputable firm with deep knowledge of the Tanzania grid design and regulations.

This study has consisted of two parts, with part one providing an overview of the TANESCO grid, the generation sources and location and the Tanzanian load profile. While the second part describes the PV plant in terms of general equipment layout and the daily generation profile. The methodology that was followed in this report will discuss the following aspects:

- **Load flows**

Load flows through powerlines and transformers to determine what the active and reactive power flows will be. Loading and losses that could be expected on transformers and lines and the voltage profile. The load flow study will focus on the impact the injection of solar-generated power will have on the 33-kV networks including the loading and active/reactive power flows through 220/33-kV transformers when the 33-kV reactors are switched in and out and the impact on the 220-kV powerlines feeding in-and out of Iringa substation.

At 33-kV level, it was found that with the injection of solar-generated power there are no negative implications on the TANESCO grid and that voltage stability is experience throughout the grid. However,

should one or either of the two 10 MV<sub>Ar</sub> reactors at Iringa be switched in, solar power should be reduced in order to avoid overloading of the two 22.5 MVA transformers. This implies that PV plant solar generation will have to be reduced or solar generation needs to change from pf=1 to pf 0.9 leading to absorbing reactive power. This scenario won't be an issue due to the power reactive capabilities of the solar inverter, that can absorb reactive power up to pf 0.8 leading.

At 220-kV level, due to the short distance between the solar facility and the 220-kV transmission station voltage levels during maximum power output is controlled by the transformer tap changer around 33-kV.

- **Short circuit study on the busses and nodes on the Iringa networks.**

The following conditions were verified:

- Fault Current Contribution: The change in fault current if the solar farm is connected. Three-phase faults and phase-to-ground faults will be considered;
- Equipment Short Circuit Rating Verification: To determine whether the interruption capacity of protection devices of equipment under a fault condition is within acceptable limits;
- Voltage during Single-Line-to-Ground Faults: To determine whether voltages of the healthy phases are within an acceptable range before and after the IPP's generator(s) is connected and a single-phase-to-line fault occurs.

Three-phase fault levels will meet the minimum electrical and mechanical requirements in terms of the impact on the breaking capacity of protection equipment.

- **Transient conditions** when faults occur on the Iringa 33-kV network or where line trips and how it will be seen by the solar power plant.

During short circuit conditions, the solar farm does not contribute towards the fault current, but instead, provide reactive current to maintain voltage levels as per the Grid Code requirements.

As it can see in the following figure the string inverter can support a Low Voltage Ride Through (LVRT) maintaining the voltage level and injecting reactive current during a short circuit according to the Grid Code requirements.

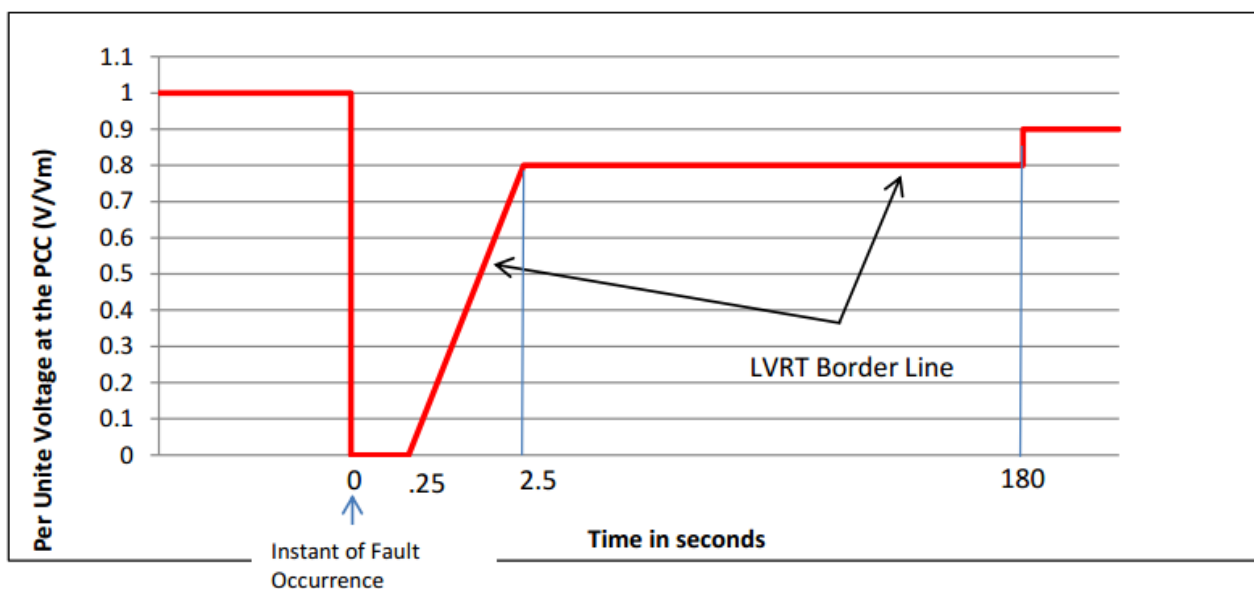


Figure 18: LVRT Inverter Response (Source: AFA/HUAWEI)

It can be concluded that the 39.17 MWac (50 MWp), PV solar plant will have no negative impact on grid performance of the TANESCO power grid in terms of voltage levels, active and reactive power flows. The injection of solar-generated power reduced the active power that used to flow from Kihansi and Kidatu hydro plants, while no change is experienced in reactive power since the solar farm generates at unity power factor. During short circuit conditions, the solar farm does not contribute towards the fault

current but instead provide reactive current to maintain voltage levels as per the grid code requirements. Therefore, is it confirmed that the integration of the PV plant in the TANESCO substation is technically feasible.

## **Chapter 9: Capability to Finance the Project**

Solar Iringa Ltd is the Special Purpose Vehicle set up in Tanzania by RP Global to develop, finance, construct and operate the 50 MWp PV Solar plant in Iringa.

RP Global can rely on a track record of more than 35 power plants developed and constructed with an overall installed capacity of over 380 MW and a finance volume of over 800 m EUR.

RP Global is thus comprised of experienced international experts with both finance and technical backgrounds, usually performing project implementation on a multi-contract basis by following the highest technical, health, safety, environmental and social standards. This makes for one of Solar Iringa Ltd's main strengths – a team adept in all kinds of areas with a great pool of knowledge. Solar Iringa Ltd has the capability to prepare the projects for international project financing as well as capital market transactions, according to 'best practice'. RPG's wind project in Poland received the Euromoney Project Finance Award 2012 as the "Best Sustainability Deal in Central and Eastern Europe". Solar Iringa Ltd had recent closings of project financings with multilateral banks (IFC, EBRD) and commercial banks (Unicredit, PKO, BES, etc.) and maintains several successful partnerships with institutions such as the Marguerite Fund, Mirova, Talanx, and the Bank of Georgia.

In Tanzania, RP Global is the main shareholder of JUMEME – Rural Power Supply Ltd., a fully integrated energy service provider, developing off- and on-grid solar energy projects. The extensive pipeline of projects aims to provide energy services directly to more than 100,000 people and 2,340 shops and small businesses.

Regarding the current Solar Project, Solar Iringa Ltd was able to secure a Letter of Intent (Lol) from the IFC and is in extensive discussions with other international DFI's.

**Chapter 10: Local Involvement**(a) Details of procurement of goods and use of goods and services:

According to the details of procurements of goods, services and materials an extract related to the Local content of the same are included here to show the local content. The total percentage of Local Content for this Project is estimated to be 25% of the value of the CAPEX.

Beside some equipment which is needed to be imported as are not produced in Tanzania (e.g. PV panels, inverters), Solar Iringa Ltd commits itself to make use of Tanzanian goods and services as much as possible. Notable examples are the purchase of local DC wiring and AC wiring, step-up transformer, and switchgear at the substations. The above-mentioned equipment will be procured from leading Tanzanian manufacturer companies. The DC and AC wiring will be acquired from Africab Group, East African Cables Ltd, Multicable Ltd or Everwell Cable Ltd, according to a selection based on the best offer in terms of quality and price. Moreover, the pre-selected Tanzanian company to procure transformers and switchgear of Tanzanian origin are TANELEC Ltd, Africab and Everwell Cable Ltd.

(b) Training and succession program:

In order to allow to develop the necessary skills required for the construction and operation of the plant, Solar Iringa Ltd has foreseen a strong training and succession program which will be beneficial for local employers. In fact, the Solar Iringa Ltd is aware that not all the necessary skills to operate the plant are readily available in the country, but nevertheless, it aims to train the local worker to obtain them. Local workers will benefit from training on the fields, and a selection of them will benefit from training executed at the European HQ of the Solar Iringa Ltd. The training will follow three different focus:

1. Managerial Skills: Training for CXOs who will lead the SPV Company;

2. Administrative Skills: This training will be focused on how to administrate the SPV Company according to the Tanzanian regulation and the International best practices;
3. Technical Skills: This training will enhance knowledge in the field of solar technologies for local technicians.

(c) Technology transfer:

Solar Iringa Ltd is committed to assist Tanzania to achieve technology transfer through clean energy production. In general, increased availability of reliable and cheap energy is a precondition to the industrialization, hence to the technology transfer to a Country. The current industrial policy direction of Tanzania points to deepening the private sector-led industrial growth as a way of transforming the economy from its heavy reliance on agriculture. Two major policy documents cater to economic transformation through industrialization. They are the Tanzania Development Vision (TDV) 2025 and the Sustainable Industrial Development Policy for Tanzania (SIDP 2020). Created in 1999 the Development Vision 2025 aims at propelling Tanzania from a least developed country to a middle-income country with a high level of human development and whose economy is diversified and semi-industrialized, while the Sustainable Industrial Development Policy 2020, on the other hand, seeks to facilitate shifting the economy's engine of growth from the public to the private sector. Taking into consideration these two main policies, we can clearly see that this Project perfectly fit into a broader path toward the industrialization allowing the Country to benefit of technological transfer both from industrialized countries and from South-South cooperation.

(d) shareholding or partnership of local companies:

For the implementation of the proposed solar Project, RP Global set up a wholly-owned Tanzanian Subsidiary, Solar Iringa Ltd. Nevertheless, RP Global is open to partnership with local companies in case they will be

beneficial for Project operations. As an example of this willingness to execute valuable partnerships in the country, it worth mention that in Tanzania, Solar Iringa Ltd is the main shareholder of JUMEME – Rural Power Supply Ltd., a fully integrated energy service provider, developing off- and on-grid solar energy projects. JUMEME Rural Power Supply Ltd is a joint venture company between European companies (Solar Iringa Ltd, TerraProject, and INENSUS) and the Tanzanian partner Saint Augustine University of Tanzania (SAUT).

(e) any subcontracting plan with local companies:

The responsibility of the construction of the Solar Plant will be under a leading International EPC Contractor, but a Subcontracting plan with local companies is already in place, identifying a number of Tanzanian company leaders in their relative sector. In fact, Solar Iringa Ltd already pre-selected some few qualified Tanzanian companies for subcontracting the Civil Works: these companies are Civil Loths, Advent Construction Ltd, Estim Construction Company Ltd, Bharya Engineering & Contracting Co. Limited, CSI Energy/CSI Construction. Regarding the Electrical Works, also in this case the Solar Iringa Ltd already pre-selected leading local company in order to execute the mentioned works. The pre-selected companies are Camusat Tanzania, The Gees Company Ltd, Nipo Group, Finafrica Engineering, Pomy Engineering Company Ltd, Seanelec Tanzania Limited. Moreover, several consultancy assignments will be executed by a Tanzanian company, e.g. Surveyor services for foundation structure, Earth movement, Water supply infrastructure, Security services during construction, Electricity supply during construction. The Solar Iringa Ltd already pre-selected leading Tanzanian company for these tasks: Geoprinosi Engineering Limited and Techno Geosurvey Consultants for Surveyor services; Karmel Contractors and Suppliers Limited, Drilling and Dam Construction Agency (DDCA), Hydro Rocks from Iringa for the water supply infrastructure (boreholes); C-Labs (TZ), Civil Engineering Laboratory of Dar

es Salaam, Dar es salaam Institute of Technology (DIT), Norplan Lab for laboratory rocks analysis, and TANESCO as electricity supplier during construction.

(f) Employment:

Solar Iringa Ltd prepared a detailed plan for the Employment which demonstrate the positive impact of the Project regarding the creation of new job opportunities in Tanzania. The created jobs will be High skilled (Engineer, Consultant, etc.), skilled (Supervisor) and unskilled positions.

The plan is divided into two periods, i.e. during construction and during operation.

During the construction period, the two Employer entities will be the EPC Contractor (including any Local Sub-contractors) and the Owner of the Project, i.e. the SPV Company that the Solar Iringa Ltd will set up in Tanzania for the purpose to develop this Project.

During the construction period, assumed in 12 months, the EPC Contractor will create the equivalent of 2,000 man-months. Of these, 1,700 man-months will be local. 300 man-months will be highly skilled jobs, 400 man-months will be skilled jobs and 1,300 unskilled jobs. See Table below for more details:

EPC Contractor					
Month	Workers (Total)	Local (Tanzanian)	Highly Skilled (engineer, consultant)	Skilled (Supervisor)	Unskilled
1	25	21	4	5	16
2	50	43	8	10	33
3	75	64	11	15	49
4	125	106	19	25	81
5	150	128	23	30	98
6	175	149	26	35	114
7	250	213	38	50	163
8	325	276	49	65	211
9	325	276	49	65	211
10	250	213	38	50	163
11	150	128	23	30	98
12	100	85	15	20	65
<b>Avg</b>	167	142	25	33	108
<b>Peak</b>	325	276	49	65	211
<b>Man-month</b>	2,000	1,700	300	400	1,300

Figure 19: Labour created by EPC Contractor during construction period (Source: Solar Iringa Ltd)

During the construction period, the Owner company will produce a total of 144 man-months jobs, assumed all of them highly skilled or skilled. Of these, 72 man-months will be created for Tanzanian people.

Owner		
Title	Workers (Total)	Local (Tanzanian)
CEO	1	0
CFO	1	1
CTO	1	0
Administrative Assistant	1	1
Project Engineer	1	1
Site Manager	1	0
HSE Officer	1	1
Owners Engineer	5	2
<b>Total</b>	12	6
<b>Man-month</b>	144	72

Figure 20: Labour created by Owner Company during construction period (Source: Solar Iringa Ltd)

During the operation period, the two Employer entity will be the local O&M Contractor and the Owner of the Project, i.e. the SPV Company that the

O&M Contractor		
Title	Workers (Total)	Local (Tanzanian)
<b>Plant Manager</b>	1	<b>1</b>
<b>Control Room Operator</b>	2	<b>2</b>
<b>Administrative Assistant</b>	1	<b>1</b>
<b>Electrical Technician</b>	2	<b>2</b>
<b>Mechanical Technician</b>	2	<b>2</b>
<b>Module Cleaning Personne</b>	3	<b>3</b>
<b>Security &amp; Surveillance</b>	2	<b>2</b>
<b>TOTAL (1 year)</b>	13	<b>13</b>
<b>Man-month</b>	3,120	<b>3,120</b>

Solar Iringa Ltd will set up in Tanzania for the purpose to develop this Project.

Figure 21: Labour created by O&M Contractor during operation period (Source: Solar Iringa Ltd)

During the Operating period, assumed in 20 years (expandable 5 years more) as per PPA duration, the O&M Contractor will create the equivalent of 3,120 man-months (13 man-months times 20+5 years) all of them skilled local workers.

During the operation period, assumed in 20 years as per PPA duration, the Owner company will produce a total of 960 man-months jobs, (4 man-months times 20 years) all of them, skilled local workers (1,200 man-month jobs if time expanded 5 years more).

Owner		
Title	Workers (Total)	Local (Tanzanian)
<b>CEO</b>	1	<b>1</b>
<b>CFO</b>	1	<b>1</b>
<b>CTO</b>	1	<b>1</b>
<b>O&amp;M Engineer</b>	1	<b>1</b>
<b>TOTAL (1 year)</b>	4	<b>4</b>
<b>Man-month</b>	960	<b>960</b>

Figure 22: Labour created by Owner company during operation period (Source: Solar Iringa Ltd)

## **Chapter 11: Solar Iringa Ltd Experience**

Solar Iringa Ltd is the Special Purpose Vehicle company set up by RP Global group to develop and construct a 50 MWp PV Solar project in Iringa.

RP Global provides extensive experience in developing, designing, constructing, financing, operating and maintaining renewable energy projects.

RP Global Holding Italy Srl is the majority shareholder of the Tanzanian Joint Venture JUMEME – Rural Power Supply Ltd, a fully integrated energy service provider, developing off- and on-grid solar energy projects. The extensive pipeline of projects aims to provide energy services directly to more than 100,000 people and 2,340 shops and small businesses by the end of 2020. JUMEME constructed and operate 12 solar mini-grid, is currently constructing 11 mini-grids and additional 10 mini-grid are in the pipelines. JUMEME fully developed and is preparing the implementation of two solar power projects, each 1 MWp, to be connected to TANESCO's isolated grids in Mpanda and Sumbawanga.

RP Global manages all its activities in a sustainable, responsible and ethical manner, which assures the health, safety and welfare of people and protection of the environment. RP Global recognizes the importance of effectively managing its Health, Safety, Environmental and Social performance and strives to minimize potential adverse impacts wherever operating. This is achieved through the implementation of an integrated Health, Safety, Environment, and Social Management System (HSESMS) on holding. Within this framework document, a full description is provided of how the HSES process is Organized, Planned, Implemented and Reviewed in order to control risks and ensure the organisation's HSES performance on an on-going basis.

During project implementation (from greenfield development to commercial operation and maintenance), RP Global always aimed to comply with all environmental standards, having to follow the strict requirements demanded by IFI’s (e.g. Performance Standards by IFC, Performance Requirements by EBRD, etc.) as well as national regulations.

**Additional EPC References**

In addition to the experience of the Solar Iringa Ltd several Letters of Intent (LoI) have been signed with some of the most experienced and reliable EPC Contractors at the global level. With the signature of the LoI, the two parties (Solar Iringa Ltd on the one side and the EPC Contractor on the other side) intend to enter into negotiations for the purpose to conclude a contract for engineering, procurement of equipment, construction, commissioning as well as operation & maintenance of the Project. The list of these EPC companies and the references for the Solar PV projects of at least 20 MW is described below for each of them.

1. EPC Contractor: China Machinery Engineering Cooperation (CMEC)

<b>S.No</b>	<b>Project Developer/Client</b>	<b>Location</b>	<b>Capacity (MWp)</b>	<b>Completion Time</b>
1	BYD Co., Ltd.	Yulin, Shanxi Province, China	300	Jan 2015- Mar 2016
2	Solar Farm-1 LLC	Nikopol, Dnipro, Ukraine	246	Apr 2018- Mar 2019
3	ZEC SOLAR SDN BHD	Johor, Malaysia	36	Apr 2018- Dec 2018
4	IDIWAN SOLAR SDN BHD	Kelantan, Malaysia	45	Apr 2019- Aug 2020

5	Kaifeng Huaxin New Energy Development Co.	Kaifeng, Henan Province, China	20	Oct 2015- Jun 2016
6	Wan FA new energy Co., Ltd.	Dunhuang, Gansu Province, China	60	Sep 2014- Feb 2015
7	BGMC BRAS POWER Sdn Bhd	Mukim Sungai Petani, District of Kuala Muda, Kedah, Malaysia	45	Apr 2019- Aug 2020
8	Kaifeng Huaxin New Energy Development Co.	Kaifeng, Henan Province, China	100	Oct 2015- Jun 2016
9	China General Nuclear Power Group	Jiayuguan, Liaoning Province, China	50	Sep 2015- Dec 2015
10	Jingdezhen CMEC-GL Renewable Energy Co., Ltd	Leping, Jiangxi Province, China	40	Sep 2015- Apr 2016
11	Lianyungang Zhonglian Power Technology Co.	Lianyungang, Jiangsu Province, China	20	Oct 2016- May 2017
12	Hefei Jinglv Yuan PV Power Plant Co. Ltd.	Changfeng, Anhui Province, China	20	Jul 2015- Mar 2016
13	Zhangjiagang Kedian Energy Technology Co. Ltd	Zhangjiagang, Jiangsu, China	36	Jul 2015- Jun 2016

14	Zhangjiakou Shengyuan new energy Co., Ltd.	Zhangjiakou, Hebei, China	30	Mar 2018-Aug 2018
15	Suixi Henghui investment	Suixi county, Zhanjiang, Guangdong, China	40	Apr 2017-Jun 2017

2. EPC Contractor: Juwi Renewable Energies (Pty) Ltd

<b>S.No</b>	<b>Project Developer/Client</b>	<b>Location</b>	<b>Capacity (MWp)</b>	<b>Completion Time</b>
1	Mulilo Sonnedix Prieska PV (Pty) Ltd	Prieska, Northern Cape Province, South Africa	86	Jul 2016
2	African Infrastructure Investment Managers (AIIM)	Kimberly, Northern Cape, South Africa	86	Planned Feb 2020
3	African Infrastructure Investment Managers (AIIM)	Leeudoringstad, North West Province, South Africa	78	Planned Jun 2020
4	African Infrastructure Investment Managers (AIIM)	Vryburg, North West Province, South Africa	86	Planned Sept 2020

3. EPC Contractor: METKA-EGN Ltd.

<b>S.N</b>	<b>Project Developer/Client</b>	<b>Location</b>	<b>Capacity (MWp)</b>	<b>Completion Time</b>
1	Sonnedix	Puerto Rico Isabela	57	Aug 2016
2	Logistic. Equi S.A	Romania Urziceni	22.5	Jan 2014
3	Lightsource LTD	UK Fakenham	26	Mar 2016
4	Hazel Capital	UK Holditch	20	Mar 2017
5	Lightsource LTD	UK Maghaberry	27.2	Jan 2018
6	United Green	Kazakhstan Burnoye	50	Jun 2018
7	Hazel Capital	UK Melksham	20	Ap 2018
8	Total Eren	Kazakhstan Zhalagash	28	under Implementati on
9	Total Eren	Kazakhstan Shu	99.9	under Implementati on
10	Ellomay	Spain Talavan	299.99	under Implementati on
11	Sonnedix	Chile Atacama	170	under Implementati on
12	METKA-EGN	Greece 41 Projects	28.7	7/8/2019
13	Westgen	Australia Byford	39.6	under Implementati on
14	METKA-EGN	Australia 6 Projects	247.5	under Implementati on

15	Gresham House	UK Preston	49	under Implementati on
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4. EPC Contractor: Sterling and Wilson International Solar FZCO

<b>S.No</b>	<b>Project Developer/Client</b>	<b>Location</b>	<b>Capacity (MWp)</b>	<b>Completion Time</b>
1	Soft Bank	India, Rajasthan	145	April-19
2	GRT Jewellers	India, Gujarat	39.0	Mar-19
3	GR Thanga Maligai (Firm)	India, Tamil Nadu	48.40	Feb-19
4	GRT Jewellers (India) Pvt Ltd	India, Gujarat	39	Jan-18
5	GRT Jewellers (India) Pvt Ltd	India, Gujarat	39	Dec-18
6	Soft Bank	India, Rajasthan	145	Oct-18
7	FRV	India, Andhra Pradesh	70.00	Sep-18
8	SP Infra	India, Tamil Nadu	54	Sep-18
9	Soft Bank	India, Rajasthan	145	Sep-18
10	Amplus	India, Karnataka	175.0	Jun-18
11	Rattan India	India, Uttar Pradesh	67.50	Mar-18
12	Light Source	India, Maharashtra	60.00	Mar-18
13	IL&FS	India, Karnataka	130.00	Mar-18
14	SP Infra	India, Karnataka	56.00	Mar-18

15	FRV	India, Andhra Pradesh	68.00	Mar-18
16	JBM	India, Maharashtra	135.0	Mar-18
17	Solar Edge (SP Group)	India, Maharashtra	169.0	Mar-18
18	GRT Jewellers	India, Karnataka	24.00	Sep-17
19	Renew	India, Telangana	78.00	Sep-17
20	Transform Sun Energy Pvt. Ltd. (SP Infra)	India, Telangana	120.00	Sep-17
21	SP Infra	India, Rajasthan	62.50	Sep-17
22	NVR Mahasolar Pvt. Ltd.	India, Maharashtra	65.00	Nov-17
23	SunEdison	India, Karnataka	30.00	July-17
24	Rattan India	India, Rajasthan	94.50	May-17
25	JBM	India, Haryana	21.00	May-17
26	Energon	India, Telangana	65.00	April-17
27	SunEdison	India, Karnataka	60.00	April-17
28	Bhageria Ind. Ltd.	India, Maharashtra	39.00	Mar-17
29	Soft Bank	India, Andhra Pradesh	195.0	Mar-17
30	Suryoday Energy Pvt. Ltd. (SP Infra)	India, Telangana	40.80	Mar-17
31	Energon	India, Telangana	65.00	Jan-17
32	NTPC	India, Andhra Pradesh	50.00	May-16

33	NV Vogt & Talettutayi Solar Projects Pvt. Ltd.	India, Telangana	24.00	May-16
34	Renew Power	India, Telangana	28.80	May-16
35	First Solar	India, Andhra Pradesh	50.00	April-16
36	First Solar	India, Andhra Pradesh	50.00	April-16
37	First Solar	India, Telangana	18.00	Mar-16
38	First Solar	India, Telangana	12.00	Mar-16
39	SP Infra	India, Tamil Nadu	36.00	Mar-16
40	SunEdison	India, Tamil Nadu	60.00	Mar-16
41	Giriraj Enterprises	India, Tamil Nadu	50.00	Sep-2015
42	SunEdison	India, Madhya Pradesh	23.00	April-2015
43	Hero Future Energies Ltd	India, Madhya Pradesh	32.00	Mar-2015
44	SunEdison	India, Madhya Pradesh	31.00	Dec-2014
45	Giriraj Enterprises	India, Rajasthan	36.30	Mar-2013
46	Visual Percept Solar Projects Pvt. Ltd.	India, Gujarat	25.00	Jan-2012
47	Multiple Developers	Egypt	127	May -19
48	Neoen	Zambia	54	Apr-19
49	Jinko Solar & Marubeni	Abu Dhabi	1177	Mar-19
50	Jinko Solar	Argentina	93.3	Mar-19
51	Alten Power	Namibia	47.1	Nov-18
52	ACWA Power	Morocco	175	Nov-18

53	Solar Capital (Pty) Limited	South Africa	90.0	Mar-16
54	Enfinity Philippines Renewable Resources Inc.	Philippines	22.3	Mar-16
55	Enfinity Philippines Renewable Resources Inc.	Philippines	28.6	Feb-16