SSI ENERGY TANZANIA LIMITED

INFORMATION FOR TANZANIA INVESTMENT CENTRE REGARDING SSI ENERGY TANZANIA LIMITED'S PROPOSED KAHAMA SOLAR PHOTOVOLTAIC PROJECT

March 2022

Contents

Project Summary

The information contained in this document is provided by SSI Energy Tanzania Limited ("SSI"). SSI is a developer of solar photovoltaic power projects in Tanzania and this business plan relates to the development of its Kahama Solar Project:

Location:	Land between the settlements of Chapulwa and Mondo in the Kahama District.
System Size AC:	10 MWp
System Size DC:	c13 MWp
Off-taker:	Tanzania Electric Supply Company ("TANESCO")
Basis of off-take:	Standardised Power Purchase Agreement ("SPPA") between SSI and TANESCO signed in December 2020
Tariff:	USD 0.07 nominal per kWh, payable in local currency, calculated at the USD/TZS exchange rate prevailing at the time of invoice
Term of SPPA:	20 years
Estimated Yield:	2,158 kWh/kWp
Grid:	Connecting to the 33kV busbar at the TANSECO substation adjacent to the Buzwagi gold mine
Additional income source:	Sale of carbon credits
Project Status:	Preparing for build (key components ordered)
EPC Contractor:	Luni Solar Enerji A.S., Turkey ("Luni")

It is the intention of SSI that:

- SSI becomes a special purpose vehicle to hold the rights of the above project. SSI and its management and shareholders intend to transfer SSI's wider project development operations into a new Tanzanian company, provisionally named SSI Development Limited. This company will also provide operations and maintenance services ("O&M") to SSI;
- the project development phase is financed 100% by SSI and its affiliates; and
- it is intended that the project construction phase is financed via 20% equity and 80% bank finance. SSI has agreed a partnership in Africa with Luni and Luni will contribute equity through an issue of shares and take a 25% ownership in SSI.

BUSINESS PLAN INFORMATION

1. Project description:

I. Explain what business the project wishes to undertake and what the project involves.

- The project involves the production and sale of electricity:
  - Production via a solar generator – a ground mounted solar photovoltaic plant;
  - Sale of electricity to TANESCO under an agreed Standardised Power Purchase Agreement (SPPA) via metered transfer of generated electricity directly into TANESCO's electricity grid;
  - SSI signed an SPPA with TANESCO for the supply and sale of all the electricity from the generator for a period of 20 years in December 2020;
  - SSI will build the solar generator on a plot of land, c60 acres in size on part of a larger plot of land it is purchasing between the settlements of Chapulwa and Mondo in the Kahama District
  - The solar generator will be built by SSI and its its EPC construction partner, Luni and the construction will be a 'standard' construction involving:
    - Installation of a steel fixed-axis mounting system, attached to cast concrete ballast blocks;
    - Attaching the bifacial solar panels to the mounting system with the panels being supplied by a Tier 1 manufacturer - Trina Solar of China;
    - Installation of string inverters manufactured by a market leader - Huawei of China;
    - Installation of transformers, also from Huawei;
    - Installation of a containerised substation produced by DNOC of UK containing switchgear and control panels for the solar park and for TANESCO;
    - Connecting the solar panels to the inverters;
    - Installation of cable trenches and laying cable to connect the inverters to transformers and substation; and
    - Connecting the solar park to the grid at the Buzwagi substation.
- Post construction, the project involves the operation and maintenance of the solar generator. It is intended that the operations and maintenance is contracted under a 'standard' O&M contract to SSI Development Limited and this, amongst other things, will include:
  - periodic technical surveys and reporting;
  - timely repair of any breakages or defects;
  - preventative maintenance;

- active and passive security monitoring; and
- Site maintenance and ground care.

- Post construction SSI Development Limited will also be responsible for:
  - administration and regulatory compliance;
  - invoicing and payments;
  - auditing;
  - management of bank monitoring; and
  - investor reporting.

II. Describe the relevant economy and industry factors surrounding the project.

- Tanzania has a growing population and currently there are approximately 58 million people and approximately 50% of the population is under 18 years of age. As the population grows and ages, it is expected that electricity demand will increase substantially as people join the workforce which in turn will lead to further growth in economic activity
- The most recent World Bank data on electricity consumption per capita in Tanzania shows 104kWh per capita, compared to Angola 312kWh per capita, South Africa 4,918kWh per capita and France 6,940kWh per capita. This suggests that electricity consumption in Tanzania is likely to rise very substantially as the economy develops and adopts trends in electrification of areas of the economy that have traditionally been served by fossil fuels, such as transport and cooking
- Tanzania has approximately 1,602MWp of installed electricity generation capacity, with a further c2,500MWp being added this decade from the Julius Nyerere Hydro Power Project
- Tanzania is also intending to become a net electricity exporter in the region of East Africa, with several planned interconnectors
- There are significant losses to generated electricity as it is distributed across Tanzania. It is estimated that more than 20% of generation is lost as generation is concentrated in the coastal region, and distances to regions such as Lakes and Mara are measured in the thousands of kilometers
- Distributed generation such as the Kahama project is attractive for TANESCO as it mitigates their transmission losses and helps to support the local voltage profile in the Kahama District and is affordable when compared to the levelized cost of generating electricity from natural gas (currently well over US$0.07kWh).
- Binding globally agreed climate change levies resulting from the UNFCC Paris Agreement 2015 and its successor Conferences of the Parties (Glasgow COP26) are likely to further increase the levelised cost of generating electricity from natural gas,

resulting in the Kahama project remaining price competitive over the duration of the SPPA (20 years) and for the future sales after the SPPA has concluded

- The current Buzwagi Mine License Area is currently being redesignated as a Special Economic Zone and Kahama is the 2nd highest tax paying district in Tanzania after Ilala, meaning high level of industrial activity, high growth of electricity consumption and likely high population growth.
- The Kahama project is to be connected at a substation with both 33kV and 220kV feeders, so it can supply Shinyanga Region and further afield. This means that it is unlikely that there will be any losses caused by grid instability in the local area.
- Under the EWURA Small Power Project Rules 2019, Electricity Act (CAP131), Kahama is a Strategic Area (high losses - power is supplied from Dar es Salaam c1,000km distant and the grid suffers voltage instability locally especially between the hours of 7pm to 10pm), therefore the project is considered beneficial to TANESCO.
- There is no alternative electricity generation nearby.

III. Show the nature and particulars of the project company including shareholders and directors, financial standing and business history.

- Nature and Particulars of the project company:
  - SSI is a limited liability company registered in Tanzania.
  - See below for further details on the company and other promoter/sponsors etc.

2. Sponsorship, governance and technical assistance:

I. Provide history and business track record of sponsors.

- The project is being 'promoted' by SSI Energy Tanzania Limited. From a solar PV perspective, the project has been sponsored/financed by Solar Securities Limited and its key shareholders

Please note that summary CVs/biographies of key personnel (directors, shareholders and other key individuals can be found in Appendix B. See also Structure/organisation chart

<u>SSI Energy Tanzania Limited ("SSI")</u>

- SSI was formed in 2017 as a Tanzanian based developer of solar photovoltaic projects, capitalising on, and combining, the experiences of its foreign directors/shareholders (solar PV/financing knowledge) with its local shareholder/director (specific country knowledge and former Deputy Energy Minister)

- SSI has become a key player in the provision of 'private sector' energy projects in Tanzania, signing the largest SPPA of any generating technology to date with TANESCO in December 2020
- SSI has been and continues to be financed by its foreign shareholders/directors

Shareholders/Directors

- SSI is currently 100% owned by Solar Securities Tanzania Limited. Solar Securities Tanzania Limited is registered in the United Kingdom and the directors of SSI and Solar Securities Tanzania Limited are:
  - Stephen Masele;
  - Nicholas Richardson; and
  - Alasdair Macdougall
- Solar Securities International Limited has four shareholders:
  - Stephen Masele: 30.0%
  - Nicholas Richardson: 32.5%
  - Alasdair Macdougall: 32.5%
  - Dunstan Ross: 5.0%

Solar Securities Limited ("SSL") www.solarsecurities.com

- SSL is a UK registered company and a specialist developer of solar generators. SSL was formed in 2009, at the outset of large-scale solar developments in the United Kingdom
- SSL has delivered more than 100MW of projects since 2009 and now together with its affiliated companies, operates in the UK, Netherlands and Tanzania
- SSL owns and operates a 5MW power plant via its subsidiary, Ashwater Solar Limited:
  - Ashwater Solar Limited: 5MW solar photovoltaic generator located in Devon, UK. The power plant was developed and constructed (EPC) by SSL. SSL undertakes the operations and maintenance (O&M). The build was financed by SSL with assistance in finance (vendor finance) from Recom Solar (majority owned and controlled by Inabata and Co - itself a daughter company of Sumitomo of Japan). Recom is the largest solar panel manufacturer in Europe.
- Currently, SSL is developing a 400MW pipeline of solar PV and battery electricity storage system (BESS) projects in the UK with Canadian Solar as development partner. Canadian Solar is one of the largest solar panel manufacturers in the world
- SSL is majority owned by Nicholas Richardson and Alasdair Macdougall

Solar Securities Netherlands B.V. ("SSNL")

- SSNL is an affiliate of SSL and is a company registered in the Netherlands and is also a specialist developer of solar generators. SSNL was formed in 2017 at the outset of large-scale solar developments in the Netherlands
- SSL owns and operates a 2.5MW power plant via its subsidiary, ZV Realastie:
  - ZV Realisatie: 2.5MW solar photovoltaic generator located in Zeeland, Netherlands. The power plant was developed by SSNL and its shareholders. The build was financed by its shareholders
- Currently, SSNL is developing a 100MW+ pipeline of solar generator projects in the Netherlands
- SSNL is majority owned by Nicholas Richardson and Alasdair Macdougall

Luni Solar Enerji, A.S. ("Luni")

- Luni is a major Turkish EPC company, majority owned by the Ilhanlar Iron Steel Metal and Trade Inc of Turkey
- Luni has completed over 200MW of projects in Turkey, Europe and West Africa
- Luni is a contractor building ground mounted and rooftop solar PV as well as a portfolio of biogas connected solar hybrid power stations for its parent company.
- As noted Luni, backed by its parent company, will invest in SSI and become a 25% shareholder
- Luni's CEO, Ozgur Karamanoglu, will join the board of SSI

II. Describe governance structures and assurance systems.

- The project company will be a special purpose vehicle, meaning that its sole purpose will be to own and operate the single solar power plant
- When financing is secured, the project company will be managed to the requirements of the financing bank. However, it is intended that the current Directors of SSI maintain control of the day-to-day operations of the company
- The project company will also operate to the highest level of governance from the perspective of the operation of a solar power plant. It is intended that the soar power plant is built to incorporate all the legal and technical requirements in Tanzania, but if and where there is no specific technical specification or operating requirements in Tanzania, that it will utilise the standards prevailing in the United Kingdom

III. Describe technical arrangements and other external assistances (management, production, marketing, finance, etc.).

- During operation, the project company will not require external assistance beyond that provided by SSI

IV. Management resources etc. will be provided by SSI as described above in Part 1. Project Description

- It should also be noted that:
  - SSL is an experienced O&M provider in the UK
  - Huawei has agreed to provide a depot with spare inverters in Tanzania

3. Management and Management Information Systems

I. Attach a detailed organisation chart

- A structure chart is provided in Appendix B

II. Provide the proposed management arrangements, including names and curricula vitae of managers

- See for I above, summary CVs/biographies of key personnel (directors, shareholders and other key individuals can be found in Appendix B

III. Provide information on the key personnel, lines of operations and posts held, present positions and descriptions of duties & responsibilities.

- As per II above

IV. Provide details of the planning, controlling, monitoring & systems, existing and those to be put in place.

- In terms of the day-to-day control of the project which will be undertaken by the Operations & Maintenance company of SSI, the project will:

- be monitored/controlled via a system such as the Huawei Neteco Monitoring System (see example page from Solar Securities generator at Ashwater in the United Kingdom)

- have a security monitoring/surveillance system and a security guard service (the project area will be fenced)
- financial control etc., via standard software packages

4. Technical feasibility, manpower, raw material resources, and environment:

I. Brief description of production process.

- The project will generate electricity from a ground mounted solar photovoltaic array (a solar generator).
- Bifacial solar panels will be mounted on a steel single axis tracker mounting system
- Solar panels generate electricity via the Photovoltaic Effect.

  https://en.wikipedia.org/wiki/Photovoltaic_effect
- Solar panels generate DC current, which is then passed through a device which turns DC current into AC current (which is the delivery standard) called an Inverter. The project will use so-called “string” inverters, as opposed to “central” inverters (see below for more details). The AC current is then passed through a transformer to step the voltage up from c400V (Low Voltage) to 33,000V (High Voltage - the

delivery standard). After this the current is passed through the switchgear in the Solar Park Substation and associated protection circuits, whereupon it is metered to account for its sale to TANESCO. The current is then supplied to the electricity grid at the 33kV busbar at the TANESCO substation at Buzwagi, Kahama.

II. Comments on special technical complexities and need for know-how and special skills.

- While there are theoretical technical complexities to building and operating a solar PV power plant, the technical complexities are in practice reduced, in particular compared to other types of electric generating station, with specific experience gained in development, construction and O&M of these facilities. One such reason for a reduced technical complexity is the fact that the system is entirely modular, requiring no specialist tools to construct, with every item fitting a standard shipping container dimension.
- Solar Securities is a specialist developer of solar power stations, with expertise and experience gained from construction and O&M of our own and customer projects in Europe.
- Technical training for O&M staff will be provided by the EPC contractor and suppliers during construction and the warranty period
- SSI specifies “string” inverters for this project which has 2 main benefits. First, “string” inverters are more efficient than “central” inverters, leading to higher generation and therefore greater financial returns. Second, “string” inverters are much easier to operate and maintain. “Central” inverters require manufacturer support in the case of breakdowns, which often takes weeks or months to obtain in Europe, and such support is unlikely to be available in Tanzania. “String” inverters can be replaced in the case of breakdowns, being a 2-man lift. Spare inverters will be kept onsite. Furthermore, SSI supplier, Huawei, has indicated that it will open a depot in-country and stock spare inverters
- The only key “special skill” required is the training required by the site O&M supervisor for switching the generator on and off at the control panel in the Solar Park Substation. Switching at 33,000 Volts requires a day's training in the procedure and safety protocols. It is likely that there are people in Kahama with this required training, as the Buzwagi gold mine has closed, leaving many trained people available. The mine operated a variety of generators and other electrical equipment rated at 33,000 volts, which required numerous people to have been trained to operate the switching.

III. Possible suppliers of equipment.

- Solar Securities' experience as a developer, owner and operator of solar PV plants suggests that it is always best to source quality equipment from leading manufactures
- Such manufactures are likely to be from the following suppliers, or equivalent 'Tier 1' suppliers:
  - Solar panels:
    - Trina Solar of China
  - Inverters:
    - Huawei of China
  - Mounting system
    - Mitas Group of Turkey
  - Transformers
    - Huawei
  - Electrical cabling
    - HIS CONNECT Solar Cable Systems of Turkey

IV. Availability of infrastructure facilities (transport and communications, power, water, etc.).

- In terms of infrastructure the project will benefit from and require:
  - Proximity of the electricity grid: TANESCO 220/33kv substation adjacent to the site. Thus, the project benefits from i) its point of connection for its output to the grid being close; and ii) also having an available input – required for the operation of the plant
  - Good internet access: fibre connection approximately 1,000m away at the Buzwagi mine. A fibre connection is useful for remote communications
  - Excellent road access: paved B3 road adjacent
- Although not a specific requirement, the project will benefit from:
  - Excellent air access: Kahama airport close by
  - Good rail access: Isaka train station approximately 30km away
- There is no material need for other infrastructure such as water

V. Requirements for and availability of skilled and unskilled manpower.

- While skilled labour is required for much of the installation process and, where possible, local skilled labour will be used, where necessary skilled labour can be temporarily brought in from countries such as South Africa and/or the United Kingdom
- The ongoing operation and maintenance of the power plant will require a mixture of skilled and unskilled labour – skilled for activities such as electrical maintenance and unskilled for activities such as general maintenance of the surrounding ground
- It is the intention of SSI to provide operations and maintenance services to the project and potentially to other plants in Tanzania. Kahama has a highly skilled workforce developed through decades of gold mining at Buzwagi and aims to capitalise on this skilled labour and to train up local personnel where required.

VI. Breakdown of projected operating costs by major categories of expenditures.

- Key to the project is the development and build cost which is currently estimated to be c.USD 10 million - see below).
- This figure includes all project preparation, the purchase of land, grid connection, installation of the plant and equipment and community benefit costs
- Once built, operating costs are:
  - Operations and maintenance (including physical security etc.)
  - Maintenance of the company (accounting, legal etc)
  - Land/ local taxes

VII. Source, cost, quantity, quality and reliability/sustainability of raw material supply and relations with support industries.

- Once built the key resource required by the project is sunlight
- Detailed sunlight data is available globally and the solar generator will be designed to maximise returns from the expected available solar radiation and the agreed export
- A PVSYST yield analysis is has been completed. PVSYST is an industry standard software package for forecasting yield
- It is currently estimated that the project will generate 2,158 kWh/kWp/year, giving a first-year specific yield of 27,520 MWh giving a planned generation revenue of over US$1.9 million in the first calendar year of operation.

VIII. Import restrictions on required raw materials.

- There are no relevant import restrictions of which SSI is aware

IX. Proposed plant location in relation to suppliers, markets, infrastructure and manpower.

- Once the generator is operational, there are no suppliers, other than SSI as provider of O&M services
- Markets: TANESCO is the only market during the duration of the SPPA. The TANESCO 220/33KV Substation (the point of connection to the grid) at Buzwagi, Kahama, is adjacent to the solar generator
- Infrastructure: see Part IV above
- Manpower: see Part V above

X. Proposed plant size in comparison with other known plants of similar type.

- At c.13MWp, when constructed the solar generator will be the largest in Tanzania, but on the small side in terms of the global market for solar generators
- It will be the only grid-tied solar generator in Tanzania.
- The only other MW scale PV generator in Tanzania is at Kigoma, but this is connected in parallel with a TANESCO diesel generator, not grid tied.
- There are a few very small projects, micro generators referred to as Very Small Power Producers in the EWURA SPP Rules

XI. Present and potential environmental issues and how these issues are addressed.

- No material environmental issues have been found or are expected. The project is expected to create a material net environmental benefit
- The project is being built close to the mine licence area at Buzwagi.
- Experience developing solar generators in Europe shows that the main environmental issue of this type of project concerns the visual impact of the development, and this is usually very minor and can be mitigated if required by screening such as hedge planting.

5. Investment requirements, project financing, and expected returns:

I. Estimate of total project cost, broken down into land, construction, installed equipment, furniture and fittings, motor vehicles, and working capital, indicating any foreign exchange components.

- See the table below for current estimate
- Note that the majority of plant and equipment will need to be purchased outside Tanzania and is, therefore, subject to exchange risk

Item	**Existing**	**Proposed/Additional**	**Total**
Land and Buildings		753,000	138,000
Plant and Equipment		7,869,663	8,672,570
Total Fixed Assets		**8,622,663**	**8,810,570**
Site preparation and logistics		640,000	160,000
Community benefit		50,000	50,000
Project Development Costs	300,000	250,000	550,000
Bank appraisal and other related costs		175,000	175,000
Total Project Cost	**300,000**	**9,562,663**	**10,037,663**

II. Proposed financial structure of venture, indicating expected sources and terms of equity and debt financing.

- See the table below for current estimate
- Note that the majority of plant and equipment will need to be purchased outside Tanzania and is, therefore, subject to exchange risk

Financing Plan (USD)				
Source	**Existing**	**New Funding**	**Total**	**Gearing**
Promoter's Equity	300,000	1,707,533	2,007,533	
Loans*	0	8,030,130	8,030,130	80%
Total Project Cost	**300,000**	**9,737,663**	**10,037,663**	

***** Existing shareholder and affiliate loans to be converted to equity

III. Types and timing of financing required and amounts.

- SSI/the project company is seeking USD 8 to 8.5 million of project finance from TIB Development Bank (assuming leverage is limited to 80%).

IV. Projected financial statements, sensitivity, profitability, and return on investment.

- See summary financial projections in Appendix C

V. Critical factors determining viability and profitability.

- Critical factors are:
  - irradiation, weather (sunshine – straightforward to predict, based on globally available data). Climate change not a significant risk to sunshine availability at this location
  - TANESCO payment performance
  - quality of build – only best in class components to be used
  - stability on the 220kv grid
  - O&M performance (marginal) – to be provided by SSI using Solar Securities expertise
  - war / crime – significant active and passive physical security/fencing/camera and sensor monitoring etc.

6. Markets and sales:

I. Indicate the basic market orientation: local, national, regional, or international.

- The project is based on the sale of all the electricity generated to TANESCO under the 20-year SPPA

II. Provide the projected production volumes, unit prices, sales objectives, and market share of proposed venture.

- See appendix C for summary figures
- As noted elsewhere, the concept of a market share is not directly relevant due to the nature of the SPPA and TANESCO being obliged to purchase all electricity generated

III. Describe the potential users of the products and distribution channels to be used. Indicate present and anticipated sources of supply of similar/competing products.

- The electricity generated will be purchased by TANESCO under the 20-year SPPA
- As noted elsewhere, the nature of the industry and the contract means that the project company is not competing with other companies

IV. Analyse future competition and possibility that substitute products may satisfy market.

- While it is expected that electricity generation capacity in Tanzania will increase greatly, electricity consumption will also rise very significantly and the project is support by the SPPA with TANESCO

V. Discuss tariff protection or import restrictions affecting products.

- Tariff protection and import restriction are not applicable to the sales of the electricity generated to TANESCO

VI. Analyse critical factors that determine market potential.

- The project is only going ahead on the basis that a 20-year SPPA has been signed. However, the following is noted:
  - the location has a 220kv grid connection, so electricity can flow to demand further away than just Kahama town
  - Buzwagi is slated as the location for a large zinc smelter, so demand is likely to significantly increase in close proximity
  - extremely high solar resource compared to other locations in the world

7. Industry Dynamics

Highlight key industry players and benchmark project performance and standing in the industry compared with competitors. Show market shares of the various key industry players. Include the following:

I. The project's competitive advantages vis-à-vis other players, giving details of the critical success factors.

- Consideration of the project's advantages vis-à-vis other players is not relevant as the project revenues are derived from the SPPA with TANESCO who are obliged to buy all the electricity generated – i.e. the project is not in competition with any other energy supply or suppliers

II. List of major competitors and their market shares.

- As noted above under 7 I. the project does not have competitors

III. Market share of the applicant company, present and future.

- As per 7 1. above, consideration of market share is not directly relevant. At the current time SSI is one of a handful of companies that have been granted a SPPA under the EWURA SPP Rules. Of these, Kahama is by far the largest solar generator. As Tanzania's energy requirements increase there will likely be greater competition amongst solar developers for suitable projects, but this will not have any impact on this generator

IV. List of major buyers with details of their selling terms.

- TANESCO is the only buyer with the terms included in the 20-year

V. List of major suppliers with details of their terms of purchase.

- Once the solar park is operational, there are no major suppliers. The largest contract (for Operations & Maintenance) will be with SSI

VI. Key industry risks and how the proposal mitigates them.

- The key risks for such an operational solar plant are:
  - the price at which generated electricity can be sold. For this project, the risk is mitigated by the 20-yer SPPA with TANESCO at USD 7 cents per kwh. Therefore, the main remaining risk is of non-payment/slow payment by TANESCO
  - the capacity of the grid network to take the electricity generated. This risk is mitigated by the sizing of the project and the location at Buzwagi and adjacent connection to the grid
  - The reliability of the equipment – the quality of the equipment generally available to the solar industry is high and SSI will only deal with highly rated globally renowned suppliers. Key equipment will also have industry standard warranties. The risks are further mitigated by the fact that there are thousands of solar panels, so if one is damaged, generation is never materially affected and likewise string inverters mean that failure of a single inverter again will not lead to a material loss of generation and inverters can be easily repaired/replaced

VII. Description of the trade cycle of the business.

- No discernable trade cycle

VIII. Seasonality of the operation giving details of peak and slack seasons.

- The seasonality of a solar plant is related to the seasonality of solar radiation at the location. While this is very significant in some countries, such as the UK, the seasonality at Buzwagi is limited.

8. Government/donor support and regulations:

I. Describe the project in the context of government economic development and investment facilitation programs.

- In the context of the Tanzanian government's, specific economic development aims the project:
  - Increases the overall level of electricity generation in the country
- The project benefits from
  - Electricity ACT - EWURA Small Power Project (SPP) Rules 2019
  - Law on investment incentives - Tanzania Investment Centre (TIC) assistance with land ownership and other matters

II. Indicate specific government incentives and support available to the project.

- It is anticipated that the project will benefit from the following initiatives introduced by the Tanzanian government:
  - From the TIC – Certificate of Incentives
  - Land ownership – law facilitating land ownership by a company controlled by foreign nationals
  - Import duty and other tax benefits

III. Show expected contribution of the project to economic development.

- Contribution to economic development includes:
  - contribution to local and central government taxes
  - climate change compliance
  - community benefit (providing infrastructure such as two small rooftop solar installations to two community facilities, potentially a water borehole requested by Kahama Municipal Council)
- reliable low-cost electricity generation at distribution level, close to customers
- non inflated (nominal) pricing to TANESCO

IV. Outline government regulations on exchange controls, conditions of capital entry and repatriation, etc. and their impact on the project.

- The project will benefit from a TIC- Certificate of Incentives

V. Indicate nature and extent of any donor support.

- At this point no direct donor support is envisaged

9. Security and risk mitigation

I. Describe the proposed security arrangements.

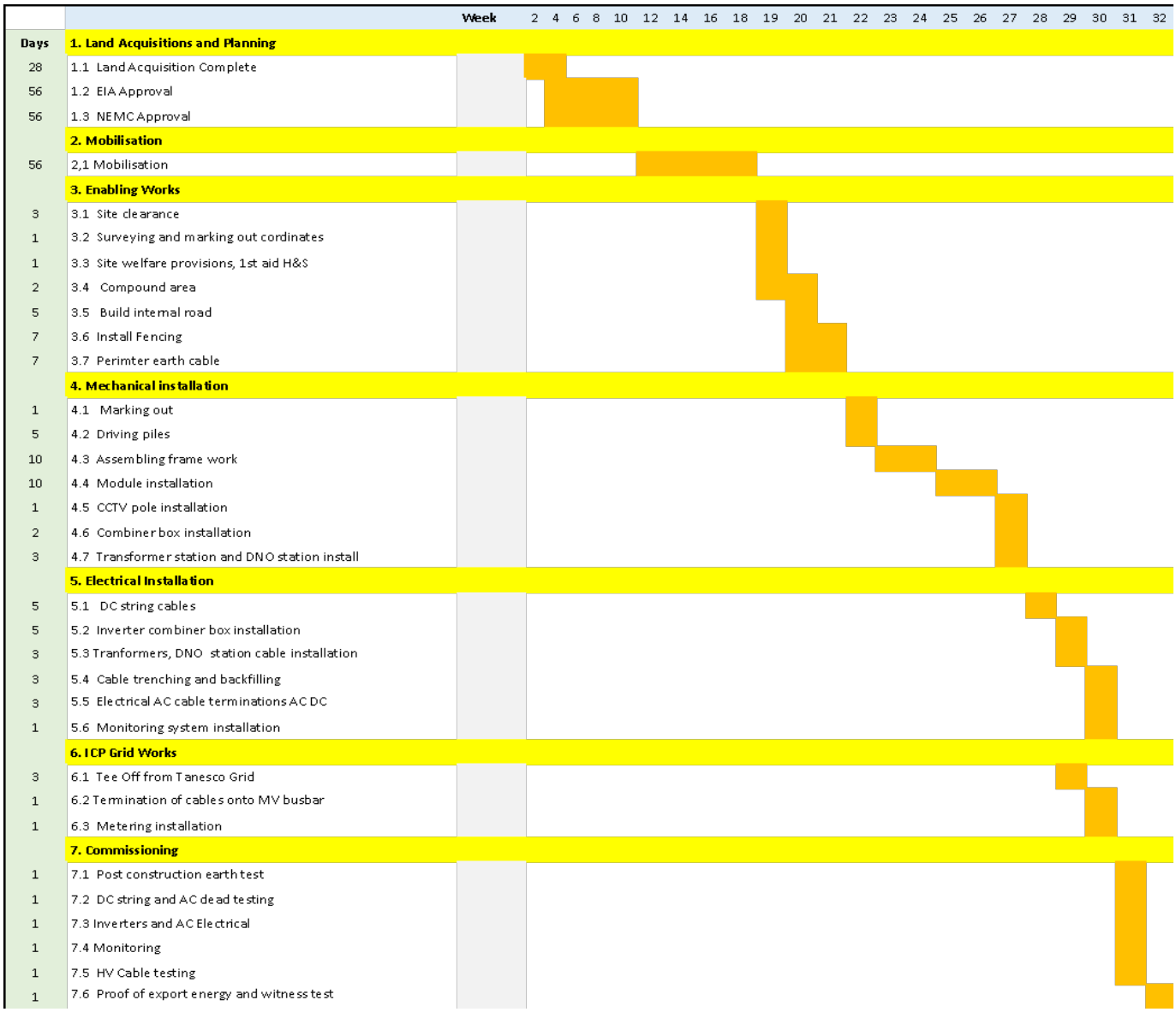
- Pledge of shares in SSI (i.e. all project assets and rights)
- Pledge of land associated with the project
- Other security as usually provided in a project financing agreement (to be agreed with TIB). For example, such security could include step-in rights and pledge of project cash flows.
- Please note that the project will also benefit from significant security systems
  - Passive:
    - barrier: fencing, hedge planting
    - monitoring: CCTV camera, infra-red, radar monitoring, motion sensors, drone flights etc.
    - cyber security
    - secure internet for the remote data acquisition, monitoring and control, website
  - Active:
    - security guards
    - dog patrols

II. Indicate specific risk mitigation measures to be adopted.

- Risks will primarily be reduced through the quality of the build/components – warranties will be provided for key components and EPC as a whole
- Fixed price SPPA mitigates revenue risk

10. Timetable envisaged for project implementation and completion.

- The current envisaged timetable is:
  - Completion of financing and final surveys and project preparation
  - Commencement of construction: July 2022
  - Completion of construction: September 2022
  - COD: September 2022
- See below for the approximate build schedule:



11. Economic Benefits and Environmental Issues

- SSI believes that the project will bring significant net economic and environmental benefits to Tanzania

Economic Benefit

- As noted in 8 III above

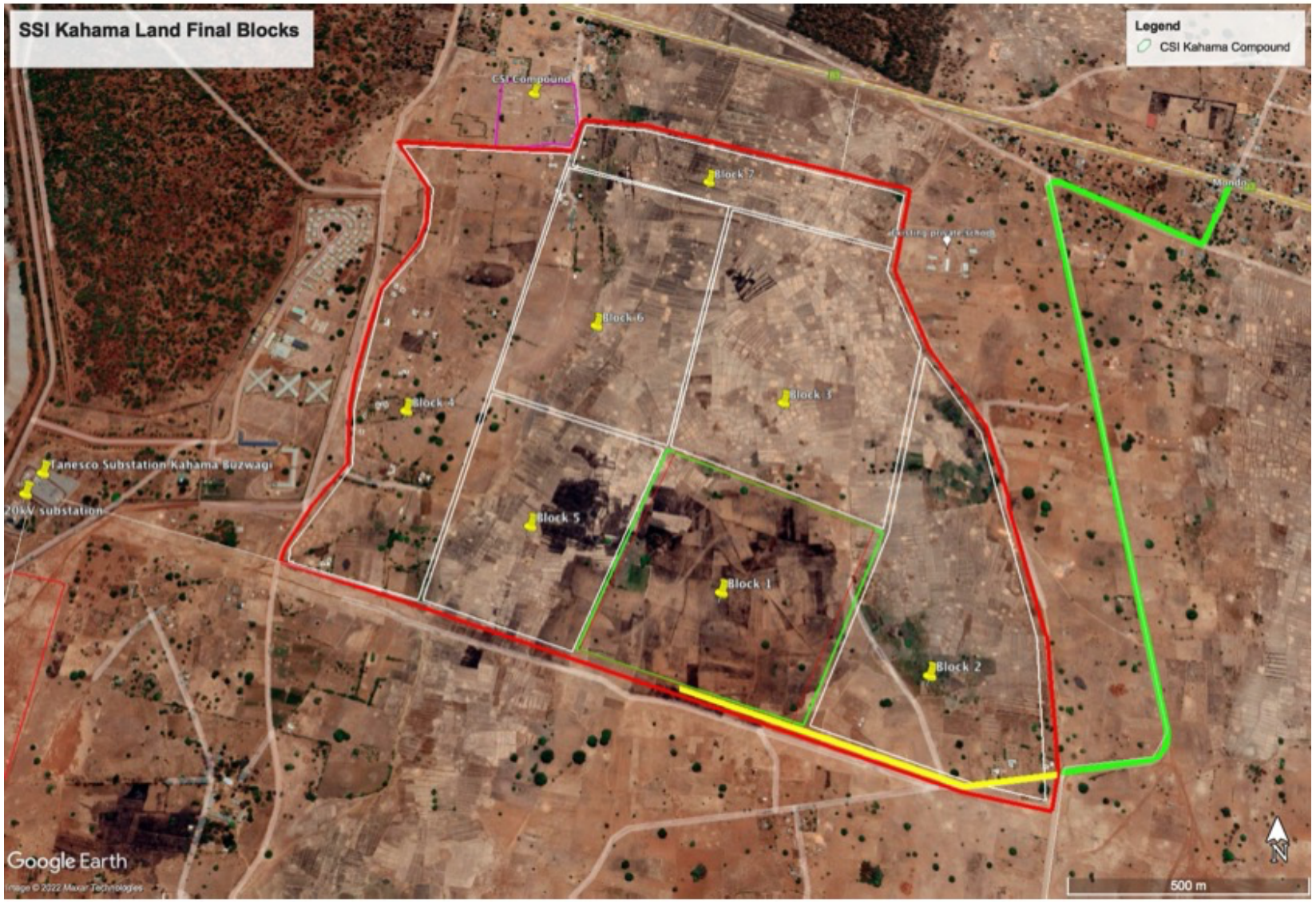
Environmental Benefit

- As noted in 4 XI above for points concerning Environmental Issues
- Can substitute fossil fuel (natural gas) in the generation mix
- Reduce CO2 and other exhaust gas pollution caused by burning natural gas
- Assisting Tanzania in the international response to the climate crisis (Glasgow COP 2021)

APPENDIX A

SITE

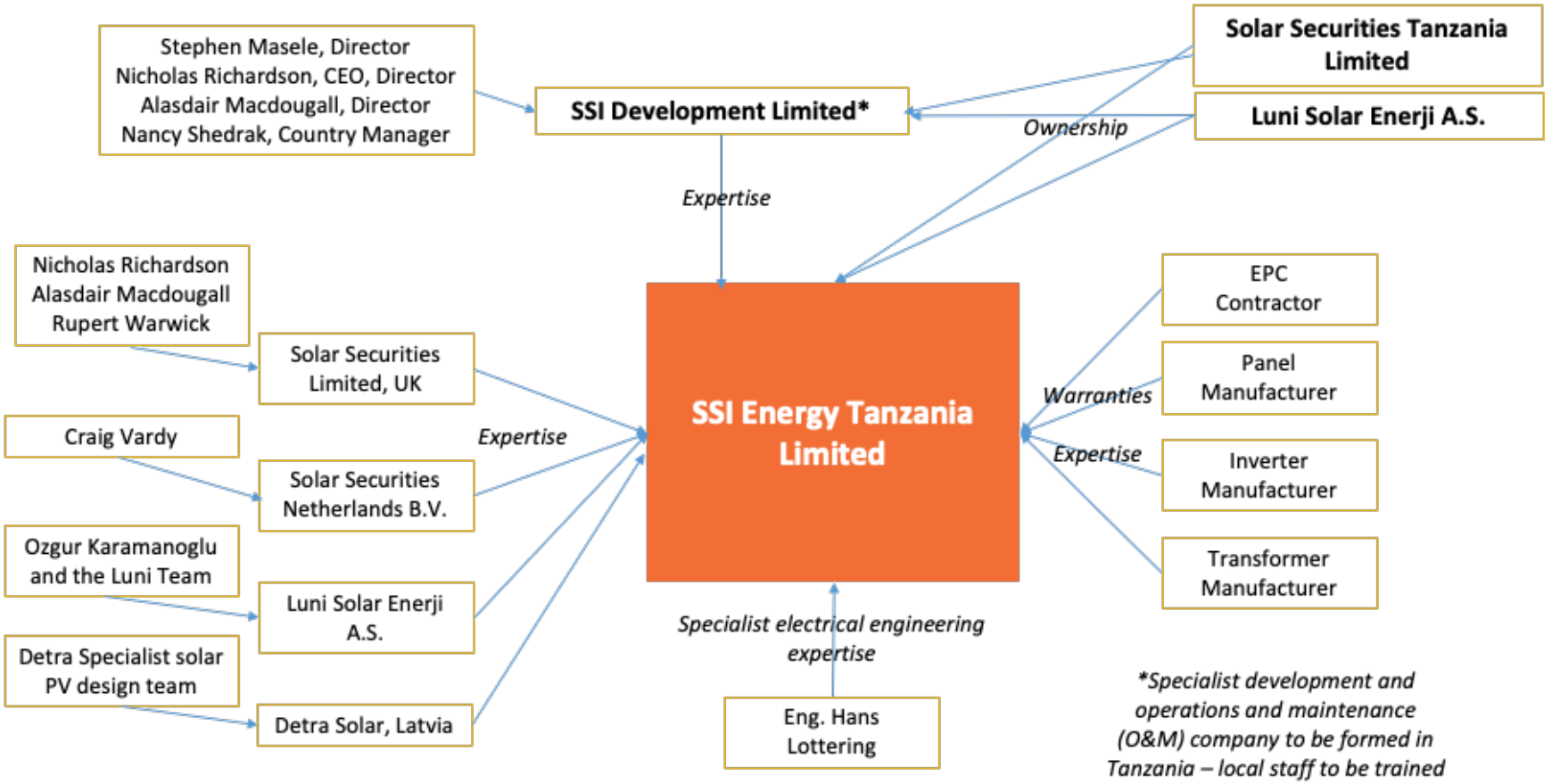
Land being acquired by SSI – Solar Project to be built on Block 1



APPENDIX B

BIOGRAPHIES / STRUCTURE /ORGANISATION

STRUCTURE / ORGANISATION



BIOGRAPHIES

Alasdair Macdougall
Director

Alasdair has been involved in Solar Securities Ltd since its formation in 2009 and is now a shareholder and the CFO. Alasdair has over 20 years experience in banking and finance, including in investment banking, private equity and spent 9 years at the European Bank for Reconstruction and Development (EBRD). Alasdair is a Chartered Accountant

Stephen Masele
Director

Stephen is a former Member of Parliament in Tanzania and a former member of the The Pan African Parliament. He served as deputy Minister in the Vice President's Office as well as deputy Energy Minister. Stephen also spent a number years working in the private sector including for Standard Chartered Bank, Stanbic Bank and Tigo. He attended Harvard University and University of Dar es Salaam

Nicholas Richardson
CEO

As a founder and the CEO of the Solar Securities Ltd since establishing the company in 2009, Nick has extensive solar industry experience and a track record of successful project delivery and profit distribution to relevant parties. Nick is a University of Oxford graduate, with degrees in history and law, with wide ranging industrial experience including steel, heavy engineering and defence

Nancy Shedrack
Country Manager

Dr Nancy Shedrack is an environmental scientist, with a degree from the University of Minnesota, USA. Nancy has extensive experience in various departments of the government in Tanzania, including the Office of the Vice President and NEMC, UN agencies such as the WFP, and also in the private sector. Nancy leads the land acquisition for SSI and manages the EIA and survey process preparing sited for construction. Nancy is a graduate of the University of Dar es Salaam

Özgür Karamanoglu
Luni CEO/EPC Specialist

Özgür is the CEO of Luni and has been working in the renewables sector since 2011 when he joined the family company, Solar Express. In 2020 Solar Express merged with Luni and Özgür was appointed CEO of the enlarged group. Özgür has managed project across the world as a developer and EPC contractor. Özgür is a mining engineer and has a degree in Occupational Health and Safety Engineering.

Rupert Warwick
Technical Advisor

Rupert has worked with SSL since 2011 and is a highly qualified town planner and project manager with extensive experience in a wide range of sectors including project planning, public relations and electric utilities in the UL. Rupert is currently managing O&M of SSL's 5MW plant in the UK alongside project managing SSL's pipeline of projects currently in development in the UK.

APPENDIX C

SUMMARY FINANCIAL PROJECTIONS

KEY FINANCIAL ASSUMPTIONS

• Installed Nominal Peak DC Capacity (Wp, kVA):	c.13,013,000
• First year specific yield (kWh/kWp/yr):	2,158
• Nominal tariff (per kWh):	7 US cents
• SPPA tariff duration:	20 years
• Annual degradation in PV system performance	0.5%
• Generation sensitivity/system availability	98% (7 days outage per year)
• Generator life span	40 years
• Annual Opex inflation (USD):	2.50%
• Corporation tax rate:	30%
• Land/local taxes (percentage of revenue):	0.25%
• Write down allowance:	100%
• Bank loan interest rate	6.0%
• Leverage	80%
• Loan term:	15 years
• Interest payments:	Quarterly
• Repayment:	Amortising
• Additional income:	Sale of carbon credits (assumed at USD 100k per year)

SUMMARY FINANCIAL PROJECTIONS

- Note: figures shown limited to first 20 years, being the length of the SPPA
- All USD
- Includes 5% build contingency

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
Revenue																				
Revenue (nominal)	**$ 1,063,214**	**$ 2,121,613**	**$ 2,112,005**	**$ 2,102,445**	**$ 2,092,933**	**$ 2,083,468**	**$ 2,074,051**	**$ 2,064,680**	**$ 2,055,357**	**$ 2,046,080**	**$ 2,036,850**	**$ 2,027,665**	**$ 2,018,527**	**$ 2,009,434**	**$ 2,000,387**	**$ 1,991,385**	**$ 1,982,428**	**$ 1,973,516**	**$ 1,964,649**	**$ 1,955,825**
Operating costs																				
Opex price inflation	**1.0000**	1.0250	1.0506	1.0769	1.1038	1.1314	1.1597	1.1887	1.2184	1.2489	1.2801	1.3121	1.3449	1.3785	1.4130	1.4483	1.4845	1.5216	1.5597	1.5987
O&M pricing	$ 443,743	$ 454,837	$ 466,208	$ 477,863	$ 489,810	$ 502,055	$ 514,606	$ 527,471	$ 540,658	$ 554,175	$ 568,029	$ 582,230	$ 596,785	$ 611,705	$ 626,998	$ 642,673	$ 658,739	$ 675,208	$ 692,088	$ 709,390
Local authority costs (0.25	$ 2,658	$ 5,304	$ 5,280	$ 5,256	$ 5,232	$ 5,209	$ 5,185	$ 5,162	$ 5,138	$ 5,115	$ 5,092	$ 5,069	$ 5,046	$ 5,024	$ 5,001	$ 4,978	$ 4,956	$ 4,934	$ 4,912	$ 4,890
Other costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
Total - Operating costs	**$ 446,401**	**$ 460,141**	**$ 471,488**	**$ 483,119**	**$ 495,042**	**$ 507,263**	**$ 519,791**	**$ 532,633**	**$ 545,797**	**$ 559,290**	**$ 573,121**	**$ 587,299**	**$ 601,832**	**$ 616,729**	**$ 631,999**	**$ 647,651**	**$ 663,695**	**$ 680,142**	**$ 697,000**	**$ 714,280**
	7%																			
EBITDA	**$ 616,813**	**$ 1,661,472**	**$ 1,640,517**	**$ 1,619,326**	**$ 1,597,891**	**$ 1,576,204**	**$ 1,554,259**	**$ 1,532,047**	**$ 1,509,560**	**$ 1,486,790**	**$ 1,463,729**	**$ 1,440,367**	**$ 1,416,695**	**$ 1,392,706**	**$ 1,368,389**	**$ 1,343,734**	**$ 1,318,733**	**$ 1,293,375**	**$ 1,267,649**	**$ 1,241,546**
Margin	29.0%	78.5%	77.9%	77.2%	76.5%	75.8%	75.1%	74.4%	73.6%	72.8%	72.0%	71.2%	70.3%	69.5%	68.6%	67.6%	66.7%	65.7%	64.7%	63.6%
Interest	-$ 471,606	-$ 450,771	-$ 428,656	-$ 405,185	-$ 380,273	-$ 353,833	-$ 325,770	-$ 295,985	-$ 264,373	-$ 230,820	-$ 195,209	-$ 157,413	-$ 117,297	-$ 74,719	-$ 29,529	$ 0	$ 0	$ 0	$ 0	$ 0
Profit before tax	$ 145,207	$ 1,210,701	$ 1,211,861	$ 1,214,141	$ 1,217,617	$ 1,222,371	$ 1,228,489	$ 1,236,062	$ 1,245,188	$ 1,255,970	$ 1,268,520	$ 1,282,954	$ 1,299,399	$ 1,317,987	$ 1,338,860	$ 1,343,734	$ 1,318,733	$ 1,293,375	$ 1,267,649	$ 1,241,546
Tax	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0	-$ 361,586	-$ 380,556	-$ 384,886	-$ 389,820	-$ 395,396	-$ 401,658	-$ 403,120	-$ 395,620	-$ 388,012	-$ 380,295	-$ 372,464
Profit after tax	**$ 145,207**	**$ 1,210,701**	**$ 1,211,861**	**$ 1,214,141**	**$ 1,217,617**	**$ 1,222,371**	**$ 1,228,489**	**$ 1,236,062**	**$ 1,245,188**	**$ 894,384**	**$ 887,964**	**$ 898,068**	**$ 909,579**	**$ 922,591**	**$ 937,202**	**$ 940,614**	**$ 923,113**	**$ 905,362**	**$ 887,354**	**$ 869,082**
Cash yield on net investme	**7.27%**	**51.83%**	**44.94%**	**39.43%**	**34.94%**	**31.22%**	**28.09%**	**25.44%**	**23.17%**	**15.11%**	**13.66%**	**12.62%**	**11.71%**	**10.90%**	**10.19%**	**9.42%**	**9.25%**	**9.07%**	**8.89%**	**8.71%**

END